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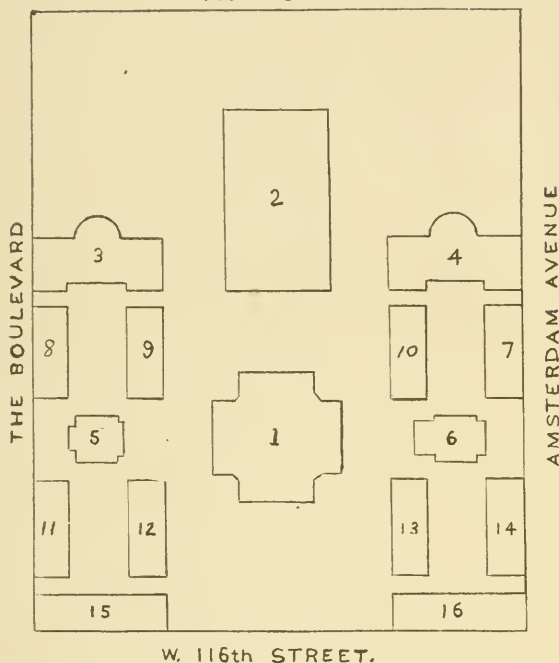


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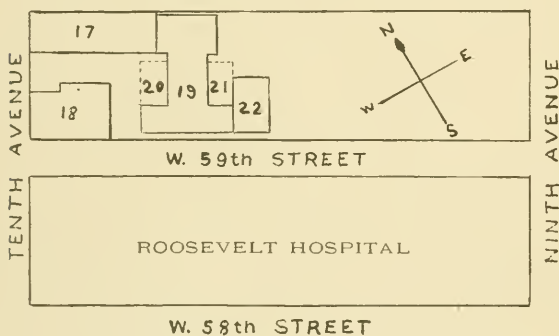
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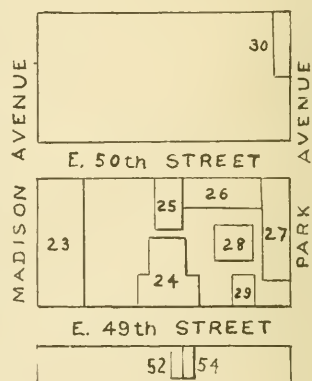
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 Woodward, B. D., *Instr.* 462 W. 22  
 Woodward, R. S., *Prof.*  
 183 Claremont Ave., Montclair, N. J.  
 Woolson, I. H., *Instr.*  
 201 Franklin, Astoria, L. I.  
 Yohannan, A., *Rev., Lect.* 138 E. 48  
 Young, C. H., *Instr.* 308 W. 58

# Columbia College in the City of New York

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## GENERAL STATEMENT

COLUMBIA COLLEGE IN THE CITY OF NEW YORK is the legal designation of the institution founded in 1754 as King's College by the grant of a royal charter from George II. The title of the corporation, originally the Governors of the College of the Province of New York, is now the Trustees of Columbia College in the City of New York.

Columbia College is governed primarily by twenty-four Trustees whose term of office is for life and who form a self-perpetuating body. The title to all the property of the College is vested in the Trustees, who also appoint the President and all officers of instruction and administration. The Trustees are the ultimate source of authority in all matters pertaining to the College.

The President has charge of the educational administration of the College, and is the Chairman of the University Council and of every Faculty established by the Trustees.

The University Council is a body consisting of the President, the dean and secretary of the School of Arts, *ex-officio*, and the dean and one elected member from each of the University Faculties. The University Council, subject to the reserved power of control by the Trustees, has charge of the general educational interests of the College and of all matters affecting more than one Faculty.

Columbia College is now both a college and a university. The college is known as the School of Arts. It offers a course of four years' duration in the liberal arts and sciences, leading to the degree of Bachelor of Arts, which is conferred on the recommendation of the Faculty of Arts.

The University consists of the following Faculties: Law, Medicine, Mines (covering Architecture and Applied Science), Political Science, Philosophy, and Pure Science. These Faculties have charge of all the graduate work, besides the professional instruction in law, medicine, and applied science. The Faculties are administrative divisions of the teaching body made in accordance with the natural affiliations of the subjects taught. The schools under their charge form convenient groupings of students. Each school bears the name of its Faculty, except that the school conducted by the Medical Faculty is known as the College of Physicians and Surgeons.

These divisions into Faculties and Schools neither control nor limit the student

in his freedom of selecting under one or several of the Faculties courses that lead to the University degrees of Master of Arts and Doctor of Philosophy. The degree of Master of Laws is also a University degree, but for this degree the choice of the student is restricted to subjects under the two Faculties of Law and Political Science. All of these degrees are granted on the recommendation of the University Council.

The professional degrees are Bachelor of Laws, Doctor of Medicine, Bachelor of Science, Engineer of Mines, Civil Engineer, Metallurgical Engineer, Electrical Engineer, and Sanitary Engineer. These are conferred on the recommendation of the Faculties of Law, Medicine, and Mines respectively.

The degrees of Doctor of Laws, Doctor of Sacred Theology, and Doctor of Letters are conferred *honoris causa* by the Trustees at their discretion.

The library of the College contains more than 215,000 bound volumes, besides a very large number of pamphlets. More than 800 scientific and literary periodicals are regularly received by the College. The library is open fourteen hours a day for reference or for the withdrawal of books, without fee to students. About 20,000 volumes are accessible from the reading-room and may be freely consulted by readers without recourse to the librarian.

The city of New York is full of opportunities that may be availed of by advanced students. In particular, by special arrangements, peculiar privileges have been obtained for students of Columbia College, free from additional charge, in the Union Theological Seminary, the Metropolitan Museum of Art, the American Museum of Natural History, and Teachers College.

The principal administrative officers, other than the President, are, the Deans of the several Faculties, the Secretary of the University, the Librarian, and the Superintendent of Buildings and Grounds.

In the following pages will be found a statement of the method of entering the College, the cost of tuition, the endowments for the benefit of students, and the special privileges open to them in affiliated institutions.

The scope of instruction given in Columbia College is indicated broadly by the statements of the departments of instruction, in connection with each of which are stated in detail the courses offered for the current academic year, together with a brief summary of the equipment of the department for the work it undertakes to do.

Following these details will be found the requirements for the University degrees, the organization of the several Schools, together with the requirements for the various degrees under the control of separate Schools, degrees conferred at the last Commencement, the list of Fellows and Scholars, publications of the College, and the calendar for the academic year.

## METHOD OF ENTERING THE UNIVERSITY

Candidates for a degree, after filling in the blank provided for the purpose, and obtaining the signature of the Dean of the proper Faculty thereto, should present the same to the Treasurer, with the proper fee. Students intending to pursue a partial course must have the amount of the tuition fee certified by the Dean of the proper Faculty, before the fee will be received.

Students entering the University for the first time are required to pay a matriculation fee of \$5, and to matriculate in the President's office by writing their names in the matriculation book. Such students must personally present, as evidence of their right to matriculate, the Treasurer's receipt upon the form provided for all required fees.

Every student holding a scholarship, or receiving the benefit of free or reduced tuition, is required to file with the Secretary of the University a certificate to that effect, from the Dean of the Faculty with which he is registered.

No student is permitted to attend any academic exercise until he has complied with the regulations in regard to matriculation and registration.

Students entering the Medical School may pay their fees and register at the College of Physicians and Surgeons, 437 West 59th Street.

All communications for the President must be addressed to him at the College.

For circulars and detailed information, address the Secretary of the University, or the Registrar of the school concerned, Columbia College, except the Registrar of the College of Physicians and Surgeons, whose address is 437 West 59th Street.

## FEES

The Statute in regard to fees is as follows:

§ 1. The following fees are established:

Matricula- tion Fees.	<i>For Matriculation</i> . . . . .	\$ 5
	<i>For Tuition:</i>	
Tuition Fees.	For candidates for a degree,	
	*In the School of Arts . . . . . per annum	150
	In the School of Law . . . . .	150
	In the College of Physicians and Surgeons . . . . .	200
	In the School of Mines . . . . .	200
	In the School of Political Science . . . . .	150
	In the School of Philosophy . . . . .	150
	In the School of Pure Science . . . . .	200
	For candidates for the degree of Master of Arts and Doctor of Philosophy . . . . .	150
	The maximum fee for the degrees of A. M. and Ph. D. shall be respectively \$150 and \$300.	
	For students pursuing partial courses,	
	at the rate of \$15 per annum for each hour of attendance per week on lectures or recitations, with a maximum fee of . . . . .	150

\* Seniors taking the first year in the Medical School or the School of Mines pay the fee required in those schools, \$200.

For auditors,  
at the rate of \$20 per annum for each hour of attendance per week on  
lectures or recitations, with a maximum fee of . . . . \$200

*For Examinations :*

	Examination Fees
For examinations at unusual times . . . . .	5
For the Bachelor's degree (not professional or technical) . . . . .	15
For any professional or technical degree . . . . .	25
For the degree of Master of Arts . . . . .	25
For the degree of Doctor of Philosophy . . . . .	35

*Special Fees :*

In the College of Physicians and Surgeons,

Dissecting material, per "part" . . . . .	1	Special Fees (Medicine).
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*For students who are not candidates for a degree :*

At the rate for each course of didactic lectures in Anatomy ; Physi- ology ; Physics and Chemistry ; Materia Medica, Therapeutics, and Hygiene ; Obstetrics and the Diseases of Women ; Surgery ; the Practice of Medicine, including the diseases of the Mind and Nervous System . . . . .	20
Dissection . . . . .	10
Practical Chemistry, including chemicals and breakage, per course	25
Laboratory course in Normal Histology, including materials . . . . .	25
Laboratory course in Pathology and Pathological History, including materials . . . . .	25
Laboratory fee for special instruction in Pathology or Histology or Bacteriology, per month . . . . .	25
Operative Surgery on the cadaver, including material, per course	20

For other special courses the fees must be specially arranged for  
with the instructors.

The clinical lectures at the Vanderbilt Clinic are free to matriculates  
who do not take the regular curriculum.

The public clinical lectures, and demonstrations of Pathological  
Anatomy, which are given at the hospitals by officers of the College,  
are free to all matriculates.

In the School of Mines,

*For graduate students :*

	Special Fees (Mines).
For the use of the cabinets only . . . . .	25
For the use of the drawing academy only . . . . .	25
For the use of the laboratories or either of them . . . . .	50
For candidates for admission to advanced standing who attend the Summer School in Surveying . . . . .	35

The President and Treasurer are authorized to determine the fees to be paid  
in special cases, for partial attendance, upon the basis of the fees hereinbefore  
specified.

§ 2. The matriculation fee shall be paid before the entrance examination.  
Examination fees shall be paid in all cases before examination.

Payment of  
Fees.

§ 3. Annual tuition fees may be paid in equal installments at the beginning of each session of the academic year, except that in the case of students in the College of Physicians and Surgeons such fees shall be paid in full at the beginning of the academic year, and except that whenever the total amount of a student's tuition fees shall not exceed one hundred dollars, the full amount shall be paid at the beginning of the academic year or at entrance.

§ 4. No candidate for a degree in any School shall be entitled to receive the same until he shall have discharged all his dues to the University.

Prepayment  
of Dues.

### Free and Reduced Tuition

§ 5. Free or reduced tuition may be granted by any Faculty, except the Faculty of Medicine, in special cases on the ground of character, ability, and need combined, but no reduced fee shall be less than fifty per cent. of the statutory charge, and the total number of students receiving free or reduced tuition under any Faculty shall not exceed ten per cent. of the total number of students registered with such Faculty. No free or reduced tuition shall be granted to any student during the first year of his connection with the University, except in the case of students matriculating for the first time in the year 1892.

§ 6. Fellows shall be exempt from the payment of all fees.

§ 7. Free students and students granted a reduction of tuition fees shall not be exempt from the payment of fees for matriculation, for extra examination, and for examination for a degree.

Fellows.  
Free Stu-  
dents.

### Comparative Statement of Students' Expenses for the Academic Year, October to June

BASED ON STUDENTS' STATEMENTS

	Low	Average	Liberal
Matriculation Fee (First Year)	\$ 5	\$ 5	\$ 5
Tuition	150	150	150
Books	15	30	40 up
College Incidentals	—	15	50 "
Room (32 weeks)	80	128	224 "
Board (32 weeks)	80	128	256 "
Clothes and Washing	35	75	125 "
All other Expenses	15	25	50 "
Total	380	556	900 up

In the case of students in the Schools of Medicine, Mines, and Pure Science, \$50.00 for tuition should be added, the fee in those schools being \$200.



### Committee on Aid for Students

The University Council has constituted a Standing Committee on Aid for Students, consisting at present of the following members :

Professor J. F. KEMP (School of Pure Science), Chairman.

“ THOS. S. FISKE (School of Arts).

“ GEO. S. HUNTINGTON (School of Medicine).

“ F. M. BURDICK (School of Law).

“ F. R. HUTTON (School of Mines).

“ F. H. GIDDINGS (School of Political Science).

“ H. A. TODD (School of Philosophy).

It is the design of the Committee to put students desiring to work their way through college, especially those coming from elsewhere than New York or the immediate vicinity, in the way of earning enough for their partial or complete support, or if possible to extend assistance to them in other ways, while they are pursuing their studies here. It is believed that many opportunities may be offered to students of this class if the fact of their desire to obtain employment is made known. Some of the openings likely to be available are : private tutoring, translating, copying of various sorts, teaching in evening schools, travelling companions, stenography and typewriting. All communications should be addressed to the Committee.

All the heads of clinics in the Medical School have also consented to give advice without charge to students who present cards of introduction from the Committee. Such visitors are received as a general rule during office hours at private offices. This insures to students who need it, the best medical advice in the city.

### FELLOWSHIPS, SCHOLARSHIPS, AND OTHER PROVISION FOR THE ASSISTANCE OF STUDENTS

Twenty-four Fellowships, known as “University Fellowships,” each of the value of five hundred dollars a year, are awarded by the Council, to those applicants who give evidence of special fitness to pursue courses of higher study and original investigation, the competition to be open to graduates of all colleges and scientific schools. Vacancies occurring in any of such Fellowships shall be filled in the same manner in which original appointments are made.

The application shall be made prior to March 1st, in writing, addressed to the President of Columbia College. Applications received later than March 1st may fail of consideration. The term of the Fellowship is one year, dating from July 1st. Residence should begin October 1st.

The candidate must give evidence

(a) of a liberal education, such as a diploma already granted, or about to be received, from a college or scientific school of good repute ;

(b) of decided fitness for a special line of study, such as an example of some scientific or literary work already performed ;

(c) of upright character, such as a testimonial from some instructor.

The value of each Fellowship is five hundred dollars. Payments will be based on the time during which the Fellow shall have been in residence. The holder of a Fellowship is exempt from the charges for tuition.

University  
Fellowships.

University  
Fellowship  
Regulations.

Every holder of a Fellowship will be expected to perform such duties as may be allotted to him in connection with his course of study, which course shall be such as to lead to the degree of Doctor of Philosophy. He will be expected to devote his time to the prosecution of special studies under the direction of the head of the department to which he belongs, and before the close of the academic year to give evidence of progress by the preparation of a thesis, the completion of a research, the delivery of a lecture, or by some other method. He must reside in New York or vicinity during the academic year.

No holder of a Fellowship shall be permitted to pursue a professional or technical course of study during his term. With the written approval of the President, but not otherwise, he may give instruction or assistance in any department of the University.

A Fellow may be reappointed at the end of a year for reasons of weight. No Fellow may be reappointed for more than two terms of one year each.

As these Fellowships are awarded as honors, those who are disposed, for the benefit of others or for any other reason, to waive the pecuniary emoluments, may do so, and still have their names retained on the list of Fellows.

**Tyndall  
Fellowship.**

A Fellowship known as the "John Tyndall Fellowship for the Encouragement of Research in Physics" is held by some suitable person, who is either a graduate of or a student in the University, but not necessarily a candidate for a degree. Such Fellow shall be appointed by the Council upon a recommendation of the head of the Department of Physics. Such appointment shall always be for the term of one year only, but the Fellow, for the time being, shall be eligible for appointment from year to year, upon like recommendation. The Fellow so appointed shall be entitled to receive during his term of office the net income of the capital sum constituting the endowment, to be paid in four quarterly installments on the usual quarter days, upon the certificate of the President; and the Trustees guarantee that such net income will amount to at least six hundred and forty-eight dollars a year, being six per cent. upon ten thousand eight hundred dollars, the fund presented to the College by Professor Tyndall.

**Barnard  
Fellowship.**

A Fellowship known as the "Barnard Fellowship for Encouraging Scientific Research" is held by a graduate of the School of Arts or the School of Mines who has evinced decided aptness for physical investigation and who may be disposed to devote himself to such investigation for some years continuously. Such Fellow shall be appointed by the Council upon the joint recommendation of the Faculties of the School of Arts and the School of Mines. Such appointment shall be for the term of one year only, but the Fellow, for the time being, shall be eligible to reappointment from year to year upon like joint recommendation. The Fellow so appointed shall be entitled to receive during his term of office the net income of the capital sum constituting the endowment, to be paid to him in four equal quarterly installments on the usual quarter days, upon the certificate of the President.

**Duties of  
Tyndall and  
Barnard  
Fellows.**

It shall be the duty of a Barnard or John Tyndall Fellow to devote himself faithfully to the investigation of some subject in physical science at this University, or at some other in this country or abroad, under the supervision of some known physicist approved by the President and the head of the Department of Physics. He shall make a report quarterly to the President, giving an account



of the work in which he has been engaged during the three months preceding ; which report shall be certified by the physicist superintending and directing him. In case of failure faithfully to fulfil the obligations imposed upon him, such Fellow shall forfeit all privileges and emoluments conferred upon him by his appointment to the Fellowship, and the Council may at any time declare the Fellowship to be vacant.

A Fellowship known as the " Henry Drisler Fellowship in Classical Philology," **Drisler Fellowship.** of the annual value of five hundred dollars, was established in 1894 in commemoration of the semi-centennial in the service of the College of Henry Drisler, LL.D., of the class of 1839, who held in this University the chairs of both Latin and Greek.

Applicants for this Fellowship must be Bachelors of Arts of this college, or of some other college or university of equivalent standing, and must have pursued the study of Greek and Latin throughout their undergraduate course. They must present testimonials from their instructors in Greek and Latin as to their zeal and success in the study of these languages, and must give evidence of fitness for a wider and more profound study of the same, and for independent research. Such evidence may be shown by the results of a special examination, or by the production of an essay or published treatise in some department of classical study. Applicants must also have a sufficient knowledge of French and German to use those languages readily in the prosecution of their studies, and must present a certificate of good moral character.

The appointment to the Fellowship will be made by the University Council on the joint recommendation of the Professors of Greek and Latin. The appointment shall be for one year, and the holder, for reasons of weight, may be reappointed ; but the Fellowship shall not be held by the same person for more than three years.

The Fellow must study at this University under the direction of the Professors of Greek and Latin, unless permitted by the Council to spend a year in some foreign university or in the American School of Classical Studies at Athens.

Thirty University Scholarships are awarded annually to students in the University Faculties of Political Science, Philosophy, and Pure Science. **University Scholarships.** These Scholarships are awarded under the following regulations, prepared by the authority of the University Council and with its approval :

The University Scholarships are open to all graduates of colleges and scientific schools whose course of study has been such as to entitle them to be enrolled at Columbia as candidates for a university degree. **University Scholarship Regulations.**

These Scholarships are tenable for one academic year, with a possibility of renewal for one year longer. They are of an annual value of one hundred and fifty dollars each.

Payments will be made to University Scholars in two equal installments ; one on October 1st and one on February 1st. University Scholars will be required to pay all of the fees established for matriculation, tuition, and graduation.

Applications for University Scholarships should be made in writing, on blanks that will be furnished for the purpose, and addressed to the President of Columbia University. For the Scholarships to be awarded in the spring, applications should be filed not later than May 1st. No application for a University

Scholarship will be required from an applicant for a University Fellowship. Should a Scholarship be awarded to an unsuccessful applicant for a Fellowship, the only information required from the candidate will be that contained in the formal application for the latter honor.

Not more than twenty of the University Scholarships will be awarded by the University Council at its regular meeting in May. The award will be made after applications have been examined and recommendations made by the Standing Committee on University Fellowships. In making these recommendations the Committee will give preference to those candidates for University Fellowships who have failed of appointment by the University Council after having been recommended for the same by any Faculty or Department.

At least ten University Scholarships will be reserved to be filled in the autumn, and applications for the same will be received up to October 1st.

University Scholars will be required to enroll themselves as candidates for a degree and to pursue a regular course of study leading thereto.

The National Society of the Sons of the American Revolution offers a silver medal under the following regulations :

1. Competition shall be open to members of the Senior Class in the School of Arts, and to first year students, not graduates of the School of Arts, studying under any of the University Faculties.

2. Each essay must contain not less than 1600 and not more than 2000 words and shall be upon the subject : The Principles fought for in the War of the Revolution.

3. A typewritten copy of each essay must be presented to the President not later than May 1st.

4. The Committee of Award shall consist of the Professors giving instruction in American History.

5. The prize shall in no case be awarded to an essay defective in English composition.

The award, if made, will be announced by the President at Commencement.

A similar tender has been made to the principal colleges of the country, and the essays receiving the Silver Medals will be submitted to a Committee of the National Society in competition for a Gold Medal to be awarded to the writer of the essay deemed most meritorious.

### School of Arts

**Alumni Scholarships.** The Alumni Association of Columbia College is entitled to have always, in the School of Arts, four students to be instructed free of charge.

**Religion and Learning Scholarships.** The Society for Promoting Religion and Learning in the State of New York is entitled to have always, in the School of Arts, two students in each class, to be instructed free of charge.

**Faculty Scholarships.** The members of the several Faculties are entitled to have their sons educated in the School of Arts free of charge.

**Alumni Competitive Scholarships.** There is offered annually, as a prize to the student passing the best entrance examination in the School of Arts, a free Scholarship for the course of four years. Such Scholarship is known as the "Alumni Competitive Scholarship," and the Faculty have power to fix the conditions under which such Scholarship is awarded.

The personal representatives of the late William B. Moffat, M.D., and their assigns are entitled to nominate and have always two students in the School of Arts to be instructed free of charge ; such Scholarships are known as the "Moffat Scholarships."

The nearest living male relative of the late John Jones Schermerhorn is entitled to nominate and have always five students in the School of Arts to be instructed free of charge ; such Scholarships are known as the "Schermerhorn Scholarships."

The Scholarship in the General Theological Seminary of the Protestant Episcopal Church (heretofore placed at the disposal of the Trustees of Columbia College by the Society for Promoting Religion and Learning in the State of New York) is awarded upon the following conditions, to wit :

*a.* All candidates shall comply with the requirements for admission of the General Theological Seminary, and as candidates for the ministry of the Protestant Episcopal Church, and must have taken the degree of Bachelor of Arts and have been graduated with honors.

*b.* All candidates shall report themselves to the Education Committee of such Society at least three months previous to the examination to be held by the Faculty for the purpose of awarding such Scholarship.

Twelve Scholarships, founded by the Trustees in 1895 in recognition of the gift to the University by President Low of a memorial building for the University Library, are open for competition to candidates for admission to the School of Arts who are residents of Brooklyn, N. Y., and have received their training in either the public or the private schools of that city. Three of these Scholarships will be awarded annually, beginning with the year 1896, to the three qualified competitors who are examined at the College in June and pass complete entrance examinations in all subjects. The papers of the competitors who pass without conditions will be examined by the Committee of the Faculty on Entrance Examinations ; and the three students whose papers as a whole are entitled to the highest rank will receive the Scholarships.

Each Scholarship entitles its holder to receive the sum of \$150 per annum during the college course ; but if he fail to maintain a standing of at least grade C in all of the courses pursued by him, or if he commit any breach of good order, he shall forfeit the Scholarship.

Should any recipient desire, he may, with the consent of the Faculty, while still retaining the title "Brooklyn Scholar," transfer to any other properly qualified candidate from Brooklyn the income from the scholarship ; and such action on his part will not be made a matter of public record.

All persons intending to compete for these Scholarships must submit satisfactory certificates of character and proficiency from the schools which they have last attended, and must state in writing that it is their intention to spend at least one year at Columbia College.

There are two scholarships in the School of Arts known as the "Stuart Scholarships," in memory of Sidney Barculo Stuart, Class of '80, Columbia College, and Eugene Talman Stuart, Class of '81, Columbia College ; founded by their grandmother, Cornelia A. Atwill, October, 1895 ; and the said Cornelia A. Atwill shall have the privilege of nominating the students for such Scholarships during her lifetime, and after her decease such nominations shall

be made by the President of the University and the Dean of the Faculty of the School of Arts on such terms and conditions as they may from time to time impose.

**Prize of the  
Alumni  
Association.**

A prize of fifty dollars in money or its equivalent, at the option of the receiver, established by the Association of the Alumni of Columbia College, was first awarded at the Commencement in June, 1858.

It is to be given "to the most faithful and deserving student of the graduating class."

Three names are selected by the Faculty and submitted to the class, who from these three designate one to receive the prize. Should the class at any time fail to make the selection, and give notice thereof to the President of the College at least ten days prior to the day appointed for Commencement, the selection of the student to receive the prize may be made by the Faculty.

**McVickar  
Prizes.**

Two Annual Seminary Prizes were founded in November, 1851, by the Rev. Dr. John McVickar, through the Society for Promoting Religion and Learning, and for which an endowment of \$1000 is provided on the following conditions:

1. The first, to be entitled The Society's Greek Seminary Prize of Thirty Dollars, to be annually competed for among such members of the graduating class as shall have given in their names to the President, at least one month previous to such competition, as candidates for the General Theological Seminary of the Protestant Episcopal Church, each student giving in his name as competitor to designate the prize for which he contends, and to be confined to the choice then made. The examination for such prize to be held publicly in the chapel, and separate from the general examination. To be on:

a. The Epistles of the New Testament (in Greek) "*ad aperturam libri.*"

b. On some one of the early Greek Fathers, to be designated at the time of noticing the prize, or, if none be designated, then upon some portion of Chrysostom or Athanasius, at the choice of the student.

The decision to be with the President and the Professor of Greek.

2. The second, to be entitled The Society's English Seminary Prize of Twenty Dollars, to be annually competed for as before, and to consist in the production of an essay (to be publicly read or not, as the President may determine), of the ordinary length of a pulpit discourse, on some subject connected with the course of evidences on which the class has been engaged; such subject to be selected by the Professor of the evidences, and given out by him at the time of notice; and the prize to be adjudged as before, by the President and the Professor of that branch; such decision to have respect to—

a. The general ability and soundness of the essay;

b. Its logical and demonstrative form; and

c. The pure Saxon style and idiom in which it is written.

The names of the successful candidates to be enrolled in a suitable book to be provided for that purpose, lettered appropriately, and kept on the library table; to be announced with other honors on Commencement Day, and also recorded honorably in the Society's books.

**Chanler His-  
torical Prize.**

In 1887, Mr. J. Winthrop Chanler, an alumnus of the College of the Class of 1847, bequeathed "to the Trustees of Columbia College in the City of New



York, the sum of one thousand dollars, to be invested and kept invested, and the income thereof to be given annually, on the Commencement Day, to the undergraduate member of the Senior Class of said College who shall be the author of the best original manuscript essay in English prose on the history of civil government of America, or some other historical subject, the same to be determined by the judgment and decision of the Faculty of said College." The bequest became available in 1879.

The subject for the prize will be announced on or before November 1st of each year, and the competitive essays must be handed to the President on or before May 1st of the year following.

### School of Law

Three prizes of two hundred and fifty dollars, one hundred and fifty, and one hundred dollars, respectively, are awarded to members of the graduating class, at the close of each academic year, for the best essays upon one or more legal topics. The competition for such prizes is open only to students who have pursued the whole course of study required for the degree of Bachelor of Laws, and who shall be certified by the Faculty to have been diligent in attendance and to have maintained a high degree of scholarship throughout. **Money Prizes.**

### College of Physicians and Surgeons

In June, 1891, the Trustees, at the request of the Alumni Association of the College of Physicians and Surgeons, established three Fellowships to be known as the Fellowships of the Alumni Association of the College of Physicians and Surgeons, the provision for which is made annually by the Association. **Fellowships of the Alumni Association.**

These Fellowships are open to graduates of the College of Physicians and Surgeons who have shown special aptitude for scientific research in the departments of anatomy, physiology, or pathology. They are held for a period of two years and have an annual value of five hundred dollars each. The appointments to these Fellowships are made by the Executive Committee of the Alumni Association from candidates presented to them by the Professor of Anatomy, the Professor of Physiology, and the Professor of Pathology.

The persons appointed to these Fellowships are expected to devote themselves to scientific research in the department which they may elect, in this country, either in the Schools of Columbia College, where they enjoy free tuition and the privileges of the laboratories, or in other institutions at their own expense. At the end of two years the holders of these Fellowships are expected to present to the Association a thesis containing evidence of independent or original work in their special department. The next appointments to these Fellowships will be made in May, 1896.

By the will of the late Alonzo Clark, M.D., LL.D., for many years President of the College of Physicians and Surgeons, and Professor of Pathology and Practical Medicine, it has been placed in the power of the Medical Faculty to bestow a Scholarship, with an income of about seven hundred dollars a year, for the purpose of promoting the discovery of new facts in medical science. **Alonzo Clark Scholarship.**

**Harsen Prizes for Clinical Reports.** Three annual prizes, founded in 1859, by the late Jacob Harsen, M.D., a graduate of the College of Physicians and Surgeons, are offered for the three best reports, in writing, by students of the Medical Department, of the clinical instruction given at the New York Hospital during any four consecutive months of the year which ends on Commencement Day.

These reports must embrace the clinical teaching of both the visiting physician and the visiting surgeon on duty.

The prizes are as follows :

A first prize of one hundred and fifty dollars ; a second prize of seventy-five dollars ; a Third Prize of twenty-five dollars.

A " Harsen Prize Medal " and a diploma are given with each prize.

**Harsen Prizes for Proficiency at Examination.** In consequence of the great increase in value of the Harsen Prize Fund, in addition to the three prizes above mentioned, there are awarded three Harsen prizes for proficiency at examination, viz.:

A first prize of five hundred dollars ; a second prize of three hundred dollars ; a third prize of two hundred dollars.

The award of these prizes is made as follows :

The ten members of each graduating class who, at their examination for the degree of Doctor of Medicine, have shown the highest proficiency in all the branches combined, receive each a diploma of " Examination Honors," and are entitled to take part in special competitive examinations, the three most meritorious competitors at which receive the first, second, and third prizes, respectively.

The competitive examinations consist :

I. Of an examination in writing, covering *all the branches* of medical teaching.

II. Of an examination upon the cadaver in *practical anatomy*, conducted by the Professor of Anatomy.

III. Of practical examinations in *clinical medicine* and *clinical surgery*, conducted at the hospitals by the Professors of Medicine and Surgery, respectively.

The relative merits of the competitors are decided, and the award of the prizes made, by a committee of three judges, consisting of the Dean of the College of Physicians and Surgeons, the President of the Association of the Alumni of the same, and a resident alumnus selected by them.

**Alumni Association Prize.** The Alumni Association Prize is a biennial prize of five hundred dollars open for competition to the alumni of the College of Physicians and Surgeons. It is awarded for the best medical essay submitted upon any subject the writer may select, and is open to competition in alternate years with the Cartwright Prize.

If no one of the competing essays be deemed sufficiently meritorious, the prize is not awarded.

*An essay in order to be held worthy of the prize must contain the result of original investigation made by the writer.*

This prize is not awarded to any essay which is the work of more than one author, or which is at the same time submitted for another prize. Each competitor is required to send with his essay to the Prize Committee a statement that these requirements have been complied with.

Essays in competition for the prize to be awarded at Commencement, 1896, must be sent to the Secretary of the Alumni Association of the College of Physicians and Surgeons on or before April 1st, 1896.

Competing essays must each be marked with a device or motto, and accompanied by a sealed envelope, similarly marked, containing the name and address of the author.

The Cartwright Prize consists of *five hundred dollars*, and is offered for competition in alternate years with the Alumni Association prize.

**Cartwright  
Prize of the  
Alumni As-  
sociation.**

It is awarded on the same terms as the latter, *except that it is open to universal competition.*

The Stevens Triennial Prize was established by the late Alexander Hodgdon Stevens, M.D., formerly President of the Medical School, on the following plan :

**Stevens Tri-  
ennial Prize.**

The prize, awarded triennially, consists of the interest yielded by the principal fund during three years, and amounts to *two hundred dollars*.

The administration of the prize is entrusted to a commission, consisting of the Dean of the Medical Faculty (*ex-officio*), the President of the Alumni Association of the College of Physicians and Surgeons (*ex-officio*), and the Professor of Physiology (*ex-officio*) in the same institution.

The prize is awarded to no essay unless it is sufficiently meritorious and includes the results of original research by the writer upon the subject chosen.

In 1897 this prize will be given to the *best medical essays* submitted, upon any subject the writer may select.

The competing essays must be sent in to the Dean of the College of Physicians and Surgeons, New York, on or before the first day of January, 1897. Each essay must be designated by a device or motto, and must be accompanied by a sealed envelope, bearing the same device or motto, and containing the name and address of the author. The envelope belonging to the successful essay will be opened, and the name of the author announced, at the annual Commencement of the College in 1897 ; at which time, also, the subjects for the next triennial prize (1900) will be announced.

The prize is open for universal competition.

The fund for the Joseph Mather Smith Prize was given by the relatives, friends, and pupils of the late Dr. Smith, as a memorial of his services as Professor in the College of Physicians and Surgeons from 1826 to 1866. Under the provisions of the trust, an annual prize of *one hundred dollars* is awarded for the best essay (if sufficiently meritorious) on the subject of the year, presented by an alumnus of the College of Physicians and Surgeons. The Prize Committee, consisting of the Dean of the Medical Faculty, the Professor of the Practice of Medicine, and the President of the Alumni Association of the College of Physicians and Surgeons, designate each year the subject for the following year. The competing essays should be sent to the Dean of the Medical Faculty on or before March 10th, each essay signed with a device or motto, and accompanied by a sealed envelope, inscribed with the same device or motto, and containing the name of the author. The envelope of the successful essayist will be opened, and the prize awarded at the annual Commencement next following.

**Joseph  
Mather Smith  
Prize.**

### School of Mines

#### Columbia Fellowship.

A Fellowship known as the "Columbia Fellowship in Architecture," which shall be open to all graduates of the Department of Architecture less than thirty years of age, is awarded under such rules and regulations as shall from time to time be determined by the President and the Professor of Architecture. Holders of such Fellowship shall devote the income thereof to foreign study and travel in accordance with plans prepared by themselves and approved by the President and such Professors, and shall upon return present a written report and exhibit drawings in the Department of Architecture. Said Fellowship shall be awarded in the spring of every even-numbered year, and payments thereof shall be made by the Treasurer on the certificate of the Professor of Architecture, indorsed by the President, in four equal installments of three hundred and twenty-five dollars each on the usual quarter days.

#### McKim Fellowships.

Two Fellowships, known as the "McKim Fellowships in Architecture," are awarded upon like conditions and for like purposes as are specified in the foregoing section, but such Fellowships shall be awarded in the spring of every uneven-numbered year, and payments thereof shall be made by the Treasurer, on the certificate of the Professor of Architecture, endorsed by the President, in four equal installments of two hundred and fifty dollars each on the usual quarter days.

### School of Political Science

#### Prize in Political Economy.

An annual prize of one hundred and fifty dollars for the best essay on some subject in political economy has been established by Mr. Edwin R. A. Seligman, of the class of 1879. Competition for the prize is open to all members of the School of Political Science. The topic selected must be approved by the Faculty, and the essay itself must not be less than twenty thousand words in length.

#### Bennett Prize.

A prize of \$40, to be given on Commencement Day, has been established by Mr. James Gordon Bennett. The prize is awarded by the Faculty of Political Science for the best essay in English prose upon some subject of contemporaneous interest in the domestic or foreign policy of the United States. The subject is assigned each year by the Faculty. The competition is open to Seniors in the School of Arts, whether regular or special students, and to all students under any of the University Faculties who have not yet taken the baccalaureate degree in arts, letters, or philosophy, provided that they take courses amounting to six hours a week throughout the year in the School of Political Science. Essays must be submitted to the President on or before May 1st. If no satisfactory essay is received no award will be made. No award will be made for any essay that is defective in English composition.

#### Toppan Prize.

A prize, to be known as the Robert N. Toppan prize, of \$150, shall be awarded annually to the member of the School who shall pass the best-written examination upon a paper prepared by the Professor in charge of the Department of Constitutional Law, so long as the said Robert N. Toppan shall continue to maintain the same.



The Trustees have established in the School of Political Science three prize <sup>Prize</sup> lectureships of the annual value of five hundred dollars each, tenable for three <sup>Lectureships.</sup> years. The power of appointment is vested in the Faculty. One of these three lectureships becomes vacant at the close of each academic year. The previous holder may be reappointed. The conditions of competition are as follows :

1 The candidate must be a graduate of Columbia College in the School of Political Science or the School of Law. In the latter case he must have pursued the curriculum of the School of Political Science for at least two years.

2 He must be an active member of the Academy of Political Science.

3 He must have read at least one paper before the Academy of Political Science during the year next preceding the appointment.

The duty of the lecturer is to deliver annually, before the students of political science, a series of at least twenty lectures, the result of original investigation.

### FELLOWSHIP REGULATIONS

No Fellow shall be allowed to accept remunerative employment except by permission of the President, and the acceptance of any such employment, without such permission, shall operate to vacate the Fellowship.

All Fellows, except as hereinbefore provided, shall be required to pursue their studies during the term of their Fellowship at the University, unless permission be granted them by the President to study elsewhere.

All Fellows shall be governed by such rules and regulations, not inconsistent with the Statutes, as may be prescribed by the Council.

### BARNARD MEDAL

A gold medal, to be known as the "Barnard Medal for Meritorious Service to Science," is awarded at Commencement at the close of every quinquennial period dating from the 17th day of July, 1889, to such person, if any, whether a citizen of the United States or of any other country, as shall within the five years next preceding have made such discovery in physical or astronomical science, or such novel application of science to purposes beneficial to the human race, as in the judgment of the National Academy of Sciences of the United States shall be esteemed most worthy of such honor.

### LOUBAT PRIZE

Mr. Joseph F. Loubat has established, at Columbia College, two prizes, a first prize of \$1000, and a second of \$400, for the best works published in the English language upon the history, geography, archæology, ethnology, philology or numismatics of North America. The competition for these prizes is open, under the deed of gift, to all persons, whether connected with Columbia College or not, and whether citizens of the United States or of any other country. No works will be considered save such as rest upon original research and constitute a distinct contribution to science. In order to insure consideration of their works, authors are invited to send copies to the President of Columbia

College, not later than June 1st of the year in which the prize is to be awarded ; but the competition will not be restricted to works thus submitted. Copies of the regulations adopted by the Trustees can be obtained from the Secretary of the University.

Mr. Loubat has provided a permanent endowment for these prizes, which will make it possible to award them at least every five years. Beginning with the competition of 1898, it has been decided to divide the above list of subjects into two groups, in which the award will be made alternately. These groups will consist, respectively, of history, geography, and numismatics ; and of archæology, ethnology, and philology. It has also been decided that, hereafter, Mr. Loubat's foundation shall be employed to stimulate research and not simply to reward the authors of meritorious works published without reference to these prizes. That is, the College will call for the investigation of certain questions and the publication of the results, and the best works produced in answer to this call, if of sufficient value, will receive the prizes. The awards to be made in 1898 shall be conferred for works relative to subjects of the second group. One or more special topics of investigation may be recommended, and the awards limited primarily to works upon such topic or topics. But if no works upon the topics suggested seem worthy of an award, the prizes will be adjudged to the best works falling within the general group of subjects designated for the period.

It is hoped that Mr. Loubat's generous foundation may serve to encourage American research in a field that is peculiarly our own, but in which much of the best work has hitherto been done by strangers.

### GRANT SQUIRES PRIZE

A prize known as the "Grant Squires Prize," consisting of the income to be derived from the fund heretofore established by Mr. Grant Squires, of the class of 1835, is awarded at Commencement at the close of every quinquennial period, dating from the first day of July, 1895, to such graduate, conducting an original investigation of a sociological character as shall be adjudged most worthy by a Committee of Award, consisting of the President, the Professor of Sociology, and one of the Professors of Political Economy, appointed by the Faculty of Political Science. Such award shall be deemed to be a recognition of scientific ability and achievement, as well as an encouragement of research.

### PRIVILEGES OPEN TO COLUMBIA STUDENTS IN OTHER INSTITUTIONS

American  
Museum of  
Natural  
History.

The American Museum of Natural History places its collection at the service of advanced students of Columbia College for the purposes of study and research and provides them with the necessary facilities for work.

Metropolitan  
Museum.

The Metropolitan Museum of Art admits students of Columbia College to the Museum on presentation of their matriculation cards, and gives them permission to draw, sketch, or copy objects in the Museum ; the curator of the department in which the student desires to work furnishing him with cards for the work.

Objects may be removed temporarily from exhibition for the purpose of special study, and students are allowed to study these objects in rooms specified for the purpose.

The Union Theological Seminary admits, without fee, such students of high standing in the senior year of the School of Arts and graduate department of the University, as may be recommended by the President, to such lectures in the regular courses of the Seminary as may be agreed upon by the Faculty of the Seminary and the President of Columbia College, and also any students of high standing in the graduate department of Columbia College recommended by the President, to any optional or special classes, subject to the approval of the Faculty of the Seminary.

Union  
Theological  
Seminary.

The privileges of the library of the Seminary, for reference, are open to all students of Columbia College on recommendation of the President. Reciprocal advantages are offered by Columbia to students of the Seminary.

The courses of instruction and the library of Teachers College, subject to the regulations of the institution, are open, without fee, to all matriculated students of Columbia College.

Teachers  
College.

### BARNARD COLLEGE

Barnard College, incorporated in 1889 by the Regents of the University of the State of New York, is a college for women, in close affiliation with Columbia University. It is an independent corporation. At Barnard College the curriculum is the same as at Columbia College, and Columbia makes itself responsible for its standards by conducting all the examinations. These are identical, so far as possible, with those of Columbia. The instruction at Barnard is given for the most part by Columbia instructors, and, when this is impossible, by persons appointed with the approval of the President of Columbia University. Degrees are given to the graduates of Barnard College by Columbia University. Through Barnard College, women, properly qualified, can obtain the Columbia degrees of A.B., A.M., and Ph.D. In the three lower years of the course the instruction is entirely separate. In the senior and graduate years certain courses at Columbia are open to the students of Barnard.

For all information concerning Barnard College, address the Registrar of Barnard College, 343 Madison Avenue.

### PUBLIC WORSHIP

Prayers are read in the College Chapel every week-day morning, except Saturday, at 9.10 o'clock, with the reading of the Scriptures and singing, and an address by the Chaplain, and all the officers and students of the University are invited to be present.

### THE LIBRARY

The library occupies the entire library building with the exception of the rooms devoted to the law school and the herbarium. It is open daily from 8.30 A.M., until 11 P.M., during term time, and until 10 P.M. in vacations. All offi-

cers, students, and graduates of all departments of the University have free access to the library and may draw books for home use. Undergraduates and alumni may draw books not exceeding three volumes in number for a period not exceeding two weeks, but may, if necessary, renew their loans.

Persons not connected with the University, who have occasion to use a library for purposes of study, and who are introduced to the Librarian as responsible, are welcome to use the library in the building.

The reading-rooms contain table space for two hundred and fifty readers, and are lighted by electric light. The west end of the main reading-room is devoted to the law students, and is surrounded by an ample collection of standard text-books, digests, statutes and reports.

A large body of dictionaries, cyclopædias and other reference books are placed in the general reading-room for common use. Students are allowed free access to a considerable part of the books in the library.

The library is carefully and accurately catalogued both by authors and subjects. The catalogue is on cards accessible to the public. Competent reference librarians are on duty at all hours during which the library is open, to render any needed assistance to readers.

The library contains about 215,000 volumes, exclusive of pamphlets and duplicates. Besides these, the library of the New York Academy of Sciences, consisting of about 8000 volumes made up largely of the transactions of learned societies, is deposited here and accessible to all readers.

The additions to the library for the past four years have averaged over 18,000 volumes annually. The library is well represented in all the subjects taught in the various courses of the University.

It is the object of the library to furnish for students and investigators standard works in all sciences, and also, as far as may be needed, the material for original research.

The library contains a number of interesting and notable special collections. Among these may be mentioned the Phoenix Library, the gift of Stephen Whitney Phoenix of the class of 1859, consisting of 7000 volumes; the Avery Architectural Library, with 13,000 volumes devoted to architecture and the building and industrial arts; the Mary Queen of Scots Library, collected and given by General J. Watts de Peyster, containing 300 volumes; and the collection of books by and about Goethe, containing 800 volumes.

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## DEPARTMENTS OF INSTRUCTION

When an announced course has not been applied for by at least three students, candidates for a degree, the instructor shall be at liberty to withdraw the course.

The number of hours, unless otherwise specified, indicates the number of hours a week for the entire year.

### Anatomy

GEORGE SUMNER HUNTINGTON, M.D.....	<i>Professor</i>
BERN BUDD GALLAUDET, M.D.....	<i>Demonstrator</i>
ELLSWORTH ELIOT, Jr., M.D.....	<i>Assistant Demonstrator</i>
LUCIUS WALES HOTCHKISS, M.D.....	<i>Assistant Demonstrator</i>
GEORGE EMERSON BREWER, M.D.....	<i>Assistant Demonstrator</i>
FREDERICK JOHN BROCKWAY, M.D.....	<i>Assistant Demonstrator and Alumni Association Fellow in Anatomy</i>
JOSEPH A. BLAKE, M.D.....	<i>Assistant Demonstrator</i>
DOUGLAS EWELL, M.D.....	<i>Assistant Demonstrator</i>
HOWARD D. COLLINS, M.D.....	<i>Assistant Demonstrator</i>
WALTON MARTIN, M.D.....	<i>Assistant Demonstrator</i>
C. C. CARMALT, M.D.....	<i>Assistant Demonstrator</i>

### Courses

I—GENERAL INTRODUCTION TO VERTEBRATE MORPHOLOGY—Anatomy of the body cavities—Visceral and topographical course—Thorax and abdomen—Cranial and cerebral topography. Lectures combined with demonstrations 3 hours. Prof. HUNTINGTON

Required, in the second year, of candidates for the degree of M.D.

II—DEMONSTRATIONS TO SECTIONS OF THE CLASS—Cranial osteology and syndesmology, myology, angiology, and peripheral nervous system of the head and neck. 1 hour. Dr. BLAKE

Required, in the first year, of candidates for the degree of M.D. Elective, in conjunction with III, IV, and V, for seniors in the School of Arts.

III—DEMONSTRATIONS TO SECTIONS OF THE CLASS—Osteology, syndesmology, myology, peripheral nervous system, and angiology of the extremities. 2 hours. Dr. BROCKWAY

Required, in the first year, of candidates for the degree of M.D. Elective for seniors in the School of Arts, in conjunction with II, IV, and V.

These courses are so arranged as to maintain, with reference to the subjects treated, a direct connection with the laboratory course in dissection No. V.



## IV—DEMONSTRATION TO SECTIONS OF THE CLASS

(B) Preliminary visceral course—Anatomy of the viscera and body cavities. 1 hour.

This portion of the course is designed to afford that general instruction in the descriptive anatomy and the relations of the viscera which is indispensable for the understanding of the courses in the normal histology and physiology of the viscera. Dr. BREWER

Required, in the first year, of candidates for the degree of M.D. Elective for seniors in the School of Arts, in conjunction with II, III, and V.

V—LABORATORY COURSE—Dissection of the human body. 18 to 20 hours a week, at various hours, for from 3 to 5 periods of 4 weeks each. Professor HUNTINGTON, Dr. GALLAUDET, and the ASSISTANT DEMONSTRATORS OF ANATOMY

Required, in the first year, of candidates for the degree of M.D. Elective for seniors in the School of Arts, in conjunction with II, III, and V.

VI—LABORATORY COURSE—Dissection of the human body. 10 to 12 hours a week for from 6 to 11 weeks. Professor HUNTINGTON, Dr. GALLAUDET, and the ASSISTANT DEMONSTRATORS OF ANATOMY

Required, in the second year, of candidates for the degree of M.D.

VII—DEMONSTRATIONS TO SECTIONS OF THE CLASS—Anatomy of the mouth, pharynx, and larynx—The auditory apparatus—The central nervous system. 3 hours. Dr. GALLAUDET

Required, in the second year, of candidates for the degree of M.D.

VIII—DEMONSTRATIONS TO SECTIONS OF THE CLASS—Visceral anatomy—Cranial Nerves—This course preserves an organic connection with Course I, and presents for direct examination and demonstration the preparations serving to illustrate that course. 1 hour, one half year. 2 hours one half year. Dr. MARTIN

Required, in the second year, of candidates for the degree of M.D.

IX—LABORATORY COURSES IN ANIMAL MORPHOLOGY—No specified number of hours a week. Professor HUNTINGTON

Optional for qualified candidates for the degree of M.D. Open as major or minor courses to candidates for the degree of A.M. or of Ph.D.

### Research

X—THE LABORATORY OF ANIMAL MORPHOLOGY is open for research, under the direction of the Professor, to advanced workers. No definite number of hours a week. Professor HUNTINGTON

### Fellowships

For the Fellowships, open to persons desiring to do special work under the Professor of Anatomy, see page 27.

### Equipment

The erection of a plant for the production of artificial cold by the anhydrous ammonia process has enabled the department, through the means offered for the indefinite preservation of fresh subjects by the cold-storage system, greatly

to increase the amount of material available for laboratory work ; and has also rendered it possible so to regulate the temperature of the general laboratory that the work can be carried on without difficulty during the warmer months at the beginning and close of the academic year.

The laboratory for advanced morphological research, equipped with apparatus, and provided with steam power and plant, electricity, and ammonia-freezing and corrosion plants, will be transferred, at the beginning of the academic year, to the third story of the new Anatomical building. Every facility for advanced and research work in morphology is here extended. The established connections of the department furnish abundant human and comparative material, both mature and embryonal. The private library of the Professor of Anatomy is at the disposal of advanced workers.

Much work has been done in the formation of a Museum of Human and Comparative Anatomy, the ultimate design of which is to present, in as complete a manner as possible, a view of the evolution of the forms of animal life, and of their natural relations, both in series of natural groups, and in the comparative and relative position of organs and systems. Even the approximate attainment of this aim will require much time and work. For the present, the energies of the department are directed toward placing in position the very abundant vertebrate material already on hand, and the collection of models and casts pertaining chiefly to human anatomy. The collection, both as regards groups and the individual preparations, is designed for the illustration of both elementary and advanced courses, and is largely used in the instruction of the medical undergraduates and in advanced study and research. The new Anatomical building will provide the opportunity for the further development of this invaluable portion of the department equipment. The first and second stories of the new building will be devoted to the Morphological Museum, and it is hoped that in the space thus provided the continued development of scientific anatomy, both for purposes of undergraduate instruction and of advanced research, will steadily proceed.

In addition to the museum collection proper the department is constantly adding to a large collection for advanced study and research.

A study-collection of human osteological preparations is so administered as to enable every student to take out the different osteological series and retain them for private study as long as required.

### Architecture

WILLIAM R. WARE, B.S.....	<i>Professor</i>
ALFRED D. F. HAMLIN, A.M.....	<i>Adjunct Professor</i>
FRANK DEMPSTER SHERMAN, PH.B.....	<i>Adjunct Professor</i>
GRENVILLE TEMPLE SNELLING, B.S ..	<i>Instructor in Architectural Engineering</i>
MAXIMILIAN K. KRESS, A.M.....	<i>Lecturer and Curator of the Collections</i>
CHARLES A. HARRIMAN.....	<i>Instructor in Architectural Drawing</i>
CHARLES P. WARREN, A.M.....	<i>Tutor in Architectural Construction</i>

### General Statement

The first three years are given to parallel courses in Drawing and Design, in History and Ornament, and in Mathematics, Architectural Engineering, and

Professional Practice, with exercises in the reading of French and German text-books and the writing of English. In the second year there are lectures in Applied Chemistry, and in the second and third years on the Theory of Architecture and on the Decorative Arts. Many of these subjects are given in alternate years, two classes taking them together. In the fourth year the students have the choice of an advanced course in History and Design, or of an advanced course in Scientific and Practical Construction. These are identical with the university courses in these subjects, so that a student who selects one of these courses as an undergraduate may return and take the other as a university student. Special students, not candidates for a degree, are received into these courses if qualified to pursue them.

In alternate years are awarded a Travelling Fellowship of the value of \$1300, established by the Trustees in recognition of the liberality to this department of Mr. F. A. Schermerhorn, and a Scholarship in the American School of Architecture in Rome, of the value of \$2000, the gift of Mr. C. F. McKim. Courses I, II, IV, V, VIII, IX, X, XIII, and XV are open as electives to seniors in the School of Arts.

### Courses

I—ANCIENT ARCHITECTURAL HISTORY—3 hours, first year. Text-book: Reber's History of Ancient Art. Mr. KRESS

II—MEDIÆVAL ARCHITECTURAL HISTORY—Byzantine, Romanesque, Gothic. 2 hours, first term, with reading of a French text-book by the second-year men and of a German text-book by the third-year men. 2 hours reports and criticisms, and 12 hours original research in the library and drawing-room, second term. Exercises in historical design. See IX and XV. Text-books: Corroyer, *L'Architecture Gothique*, and Redtenbacher, *Mittelalterliche Baukunst*. Every other year to second and third-year classes together (alternating with III). Professor WARE (1896-97)

III—MODERN ARCHITECTURAL HISTORY—The Renaissance, modern revivals, American architecture. 2 hours, first term, with reading of a French text-book by the second-year men and of a German text-book by the third-year men. 2 hours reports and criticisms, and 12 hours research in the library and drawing-room, second term. Exercises in historical design. See IX and XV. Text-books: Palustre, *L'Architecture de la Renaissance*, and Alois Hauser, *Styl-lehre der Rence*. Every other year to second and third classes together (alternating with II). Professor HAMLIN (1895-96)

IV—THE THEORY OF ARCHITECTURE—The theory of form, proportion, symbolism, the decorative arts, stained glass, mosaic, fresco. In alternate years:—The theory of color, harmony of color, planning, composition and style. 1 hour, second and third-year classes together. Professor WARE

V—HISTORY OF ANCIENT ORNAMENT—The decorative forms of Egyptian, Assyrian, Greek, and Roman art. 1 hour, first year. Professor HAMLIN

VI—HISTORY OF MEDIÆVAL ORNAMENT—Byzantine and Gothic ornament. 1 hour (alternating with VII), every other year to second and third classes together. Professor HAMLIN (1896-97)



VII—HISTORY OF MODERN ORNAMENT—Renaissance, Oriental, and Modern ornament. 1 hour (alternating with VI), every other year to second and third classes together. Professor HAMLIN (1895-96)

VIII—THE ELEMENTS OF ARCHITECTURE—Mouldings, the orders, pedestals, pilasters, pediments, intercolumniation, superposition, balusters and balustrades, arches and arcades, imposts, doors, windows, roofs, spires, steps, stairs, vaults, domes. Eighteen plates required. 2 hours, second term of first year. Professor SHERMAN

#### IX—DRAWING—

A Architectural drawing, with brush, pencil, and pen ; first year.

B Historical drawing, in connection with lectures on architectural history ; first, second, and third years.

C Freehand drawing, with pencil, pen, and brush ; sketching, drawings from the cast and from photographs of ornament, architectural detail, and the human figure ; water colors ; first, second, third, and fourth years. 12 hours during about half the year, in connection with research in II and III.

D Sketches and measured drawings from buildings. Second, third, and fourth years. Every afternoon during October. Professor HAMLIN, Mr. KRESS, and Mr. HARRIMAN

X—PROJECTIONS, INTERSECTIONS, AND SHADES AND SHADOWS—2 hours, first term of first year. Twenty plates required. Professor SHERMAN

XI—PERSPECTIVE—12 lectures, second year. Eight plates required. Professor WARE

XII—DESCRIPTIVE GEOMETRY AND STONE-CUTTING—I hour, fourth year. Twenty plates required. Professor SHERMAN

XIII—SPECIFICATIONS, CONSTRUCTION—Ironwork—steel and iron construction, processes of manufacture, joints, framing, and bracing, plumbing (1895-96). Masonry—foundations, stonework, brickwork, plastering, fireproofing, terra-cotta (1896-97). Woodwork—carpentry, joinery, hardware, painting, glazing, roofing, slow-burning construction (1897-98).

The class copy a model specification and are examined upon the lectures. 1 hour, first, second, and third years. Mr. WARREN

XIV—ARCHITECTURAL ENGINEERING—Analytical trigonometry ; analytical geometry ; the Calculus—statics, elementary dynamics ; foundations, retaining walls, walls, pillars, beams, trusses, arches, vaults, and domes. Text-book : Kidder's Hand-book. 2 hours, first year ; 3 hours, second year ; 4 hours, third year. Professor SHERMAN and Mr. SNELLING

XV—ARCHITECTURAL DESIGN—15 hours, second term of first year, first term of second and third years, and during both terms of fourth year. Problems in design : plans, elevations, sections, and details. Professors WARE and HAMLIN

In the first and second years the problems involve special drill in the use of the orders ; in the third and fourth years in planning and composition.

In the second and third years the afternoons of the second term are mainly occupied by historical study ; but there are also a limited number of problems in historical design. See II and III.

XVI—ARCHÆOLOGY—2 hours, second year, in French. Text-books : Corroyer, *L'Architecture Gothique* ; Palustre, *L'Architecture de la Renaissance*. 2 hours, third year, in German. Text-books : Redtenbacher, *Mittelalterliche Bankunst* ; Alois Hauser, *Styl-lehre der Rence*. Mr. KRESS

XVII—ARCHITECTURAL ESSAYS—1 hour, first, second, and third years. Professor WARE

XVIII—ADVANCED ARCHITECTURAL HISTORY—2 hours, fourth year ; reading and writing on special topics with illustrative drawings. Professor WARE

XIX—ADVANCED ARCHITECTURAL DESIGN—Advanced problems in planning and composition. 20 hours, fourth year. Professor HAMLIN

XX—ADVANCED ARCHITECTURAL ENGINEERING—Practical examples in applied mechanics, treated both graphically and analytically. Problems in constructive design. 3 hours lectures, 15 hours practice, fourth year. Mr. SNELLING

XXI—ADVANCED CONSTRUCTION—The study of building processes. 2 hours, fourth year. Mr. WARREN

XXII—UNIVERSITY COURSE IN HISTORY AND DESIGN

XXIII—UNIVERSITY COURSE IN CONSTRUCTION

These two university courses are identical with the fourth-year elective courses ; XVIII, XIX, XX, and XXI. They are open to graduates of colleges and scientific schools who are qualified to take them, and to experienced draughtsmen.

Students are received for periods of two months at a time.

### Equipment

The equipment of the department consists of about 15,000 photographs, about 900 books, a classified library of prints and plates, the Avery Architectural Library of about 10,000 volumes, a collection of MS. drawings from the *École des Beaux-Arts*, a collection of casts of architectural details from ancient and modern Roman buildings, a collection of building-stones, tools, and materials, and about 5000 lantern slides of architectural subjects. The Willard collection of architectural casts at the Metropolitan Museum is open to students every day and two evenings every week.

### Astronomy

JOHN KROM REES, A.M., E.M., Ph.D.....	<i>Professor</i>
HAROLD JACOBY, A.B.....	<i>Adjunct Professor</i>
HERMAN STEARNS DAVIS, A.M., Ph.D.....	<i>Tutor</i>

### General Statement

Course III is required of students in the School of Mines in the course of Civil Engineering during the third and fourth years.

Course I is elective for juniors and seniors in the School of Arts ; Courses II and III for seniors in the same school ; and Courses II–VI for university students and candidates for the A.M. and Ph.D. degrees.

### Courses

I—GENERAL ASTRONOMY—This course is historical and descriptive, and is supplemented by visits to the observatory, where students are taught to locate the principal constellations, and are afforded opportunities to view the sun, moon, planets, nebulae, and stars. Reference books: Young's General Astronomy, Grant's History of Physical Astronomy, Clerke's History of Astronomy during XIX Century, and Clerke's System of the Stars. 2 hours. Professor REES, assisted in the observatory by Dr. DAVIS

Elective for seniors and juniors in the School of Arts.

II—SPHERICAL AND PRACTICAL ASTRONOMY—This course consists mainly of the study and use of the sextant for time and latitude determinations, and of the transit instrument for time. Reference book: Hand-book of Practical Astronomy by W. W. Campbell. 2 hours lectures and 2 hours observatory work. Dr. DAVIS

Elective for seniors in the School of Arts. Offered as a minor for the degree of A.M.

III—GEODESY—This course deals with the subjects named in the scheme of the Summer School in Geodesy. During the vacation the students are required to attend the summer school for six weeks to learn the use of apparatus, as indicated by the following:

- (1) Use of the nautical almanac and American ephemeris.
- (2) Sextant observations for time and latitude.
- (3) Transit instrument for time.
- (4) Base line measurements.
- (5) Angle measurements by "directions."
- (6) Determination of the azimuth of a line.
- (7) Barometric hypsometry.

Reference books: Campbell's Practical Astronomy, Clark's Geodesy, United States Coast Survey Reports, and Jordan's Handbuch der Vermessungskunde. 2 hours lectures first year and first term of the second year. Professor REES, Professor JACOBY, and Dr. DAVIS

Required of students in the School of Mines in the Civil Engineering course during third and fourth years. The third-year work is offered as a minor for the degree of A.M.

The fourth year, including summer school work, is offered as a major for the degree of A.M.

IV—ADVANCED SPHERICAL AND PRACTICAL ASTRONOMY—This course deals with the subjects of time, latitude, and longitude; use of equatorial and of zenith telescopes. Reference books: Chauvenet's (two vols.) Spherical and Practical Astronomy, and Doolittle's Practical Astronomy. 2 hours lectures and 4 hours observatory work for two years. Professor REES and Professor JACOBY

First year offered as a major for the degree of A.M. or a minor for the degree of Ph.D.

Two years' work offered as a major for the degree of Ph.D.

V—THEORETICAL ASTRONOMY—This course deals mainly with the theory of comet orbits and their calculation. Reference books: Klinkerfues' Theoretische Astronomie and Oppolzer's Bahnbestimmung. 1 hour, supplemented by computations, for 2 years. Professor JACOBY

First year offered as a major for the degree of A.M. or a minor for the degree of Ph.D.

Two years' work offered as a major for the degree of Ph.D.

VI—THEORY AND METHODS OF REDUCTION OF PHOTOGRAPHIC STAR PLATES—This course deals with the determination of star places from the photographic plates, and includes the subjects of stellar parallax and proper motion. 1 hour, with practical work, for 2 years. Professor JACOBY

First year offered as a major for the degree of A.M. or a minor for the degree of Ph.D.

Two years' work offered as a major for the degree of Ph.D.

### Equipment

The apparatus of the department consists principally of the following :

- (1) The Rutherford equatorial of 13 inches aperture with a correcting lens for photography
- (2) Three transit instruments
- (3) Two fine clocks and several chronometers
- (4) Three chronographs
- (5) Three-inch zenith telescope by Wanschaff of Berlin
- (6) Measuring machines for photographs by Rutherford and Repsold
- (7) Personal equation machine
- (8) Base-measuring apparatus
- (9) Theodolites by Wanschaff of Berlin and Saegmuller of Washington, D.C., with micrometer microscopes reading to a second of arc

The library is well supplied with the books relating to the works of the department, having lately purchased the Struve collection of astronomical publications

### Bacteriology

(See page 112).

### Biology

HENRY FAIRFIELD OSBORN, Sc.D.....	<i>Professor</i>
EDMUND B. WILSON, Ph.D.....	<i>Professor</i>
BASHFORD DEAN, Ph.D.....	<i>Instructor</i>
GARY N. CALKINS, B.S.....	<i>Tutor</i>
OLIVER S. STRONG, Ph.D.....	<i>Tutor</i>
NATHAN R. HARRINGTON, A.B.....	<i>Assistant</i>

### General Statement

The courses in this department are all elective, leading to the degree of A.B., A.M. and Ph.D. They consist of lectures followed by from 4 to 8 hours of practical work in the laboratory, and are arranged consecutively, advancing from instruction belonging properly to a liberal education up to extreme specialization. First: The elementary courses I and II are designed for general training in the principles of animal biology, as part of the general education of scientific and academic students. Second: The courses III and IV follow, and are of a slightly more special character, being arranged for students preparing for advanced medicine, physiology, and geology. Third: The earlier

university courses V, VI, and VII are arranged as minor courses for students of palæontology, botany, and physiology, and as first-year courses for students of advanced biology. Fourth : The more special university courses IV, VIII, IX, X, and XI are designed for the higher and research training of advanced university students.

In addition to the regular instruction of the department the third series of "Columbia University Biological Lectures" will begin in January, 1896, in the following courses : By Lloyd Morgan, F.R.S., upon the *Instincts of Birds* ; by Frank M. Chapman, upon the *Structure and Distribution of Birds* ; by Henry F. Osborn, upon the *Rise of the Mammalia in North America*. These lectures are delivered in the College. All other courses are given at the Medical School.

### Courses in Animal Biology

I—ELEMENTARY ZOÖLOGY—Introductory to biology, palæontology, geology. Descriptive of the various orders of animals. Lectures and demonstrations. Packard's Elements of Zoölogy. 1 hour. Dr. DEAN

Open to second-year students, School of Mines.

II—ELEMENTARY BIOLOGY—Introductory to morphology, physiology, and general biology. A general course upon lower and higher organisms. Lectures and laboratory work. Sedgwick and Wilson's General Biology. Marshall and Hurst's Practical Zoölogy. 2 afternoons (4-6 hours). Professors WILSON and OSBORN

Elective for juniors, School of Arts.

III—GENERAL ZOÖLOGY—More advanced treatment of subjects under Course II. Preparatory to biology and medicine. Lectures and laboratory work. Wiedersheim's Comparative Anatomy ; Foster and Balfour's Elements of Embryology ; McMurrich's Invertebrate Morphology. 2 afternoons (4-6 hours). Professors OSBORN and WILSON

Elective for seniors, School of Arts.

IV—COMPARATIVE NEUROLOGY—An introduction to the comparative structure of the brain and nervous system of the lower and higher animals. Lectures and laboratory work. Edinger's Lectures upon the nervous system. Also Obersteiner, Romanes, Retzius. 1 morning, or day (3-6 hours). Dr. STRONG

Open to seniors and university students.

V—COMPARATIVE ZOÖLOGY—Anatomy and organogeny of vertebrates and invertebrates with reference to systematic zoölogy. Lectures and laboratory work. Wiedersheim's Grundriss der Vergleichenden Anatomie ; Claus's Zoölogy ; McMurrich's Invertebrate Morphology ; Lang's Comparative Anatomy. 6 hours (1 day). Professors OSBORN and WILSON

Required of candidates for Ph.D. whose major or minor subject is Biology, first year.

VI—COMPARATIVE EMBRYOLOGY—A general comparative treatment of the earlier stages of development, with especial reference to vertebrates. 6 hours (1 day) through the first term (parallel with Course V). Foster and Balfour's Elements ; Marshall's Embryology. Professor WILSON

Required of all candidates for Ph.D. whose major subject is Biology.



VII—CELLULAR BIOLOGY—General structure and functions of the cell. 6 hours (1 day) through the second term (parallel with Course XII). Hertwig, Zelle und Gewebe. Professor WILSON

VIII—MORPHOLOGY OF THE MAMMALS—A study of the structure and development of fossils and recent mammals. Lecture and laboratory courses. Flower's Osteology ; Flower and Lydekker, Mammals ; Zittel's Palæontologie. 6 hours (1 day). Professor OSBORN

Open to university students.

IX—MORPHOLOGY OF THE FISHES—The comparative anatomy and embryology of the fishes, recent and fossil. Optional museum course in first term. Lecture and laboratory course in second term. Dean's Fishes Living and Fossil ; Smith Woodward's Catalogue of Fossil Fishes. 6 hours (1 day). Dr. DEAN

Open to School of Mines students, juniors and seniors in certain courses, and university students.

X—SPECIAL MORPHOLOGY—The Protozoa. A general treatment of the classification, morphology, and physiology of this type of organisms, and of their relations to modern theories of biology. 1 hour second term. Bütschli, Protozoa in Bronn's Thierreich. Mr. CALKINS

Open to university students.

XI—ADVANCED BIOLOGY—The study of special groups of animals or of special biological problems, as an introduction to original investigation. 12 hours (2 days).

Open to university students, second or third year.

XII—SPECIAL AND EXPERIMENTAL EMBRYOLOGY—Critical treatment of the problems of cleavage, germ-layers, differentiation, and the general interpretation of development. 6 hours (1 day) through the second term (parallel with Course VII). Mark-Hertwig ; Heider and Korschelt. Professor WILSON

Open to university students.

The announcement of additional courses for 1896-97 will be made later in the Pure Science circular.

### Equipment

Pending the construction of the permanent biological laboratory in Schermerhorn Hall, a thoroughly equipped laboratory has been arranged on the third floor of the northern wing of the College of Physicians and Surgeons (West 59th Street), including general and advanced laboratories, museum, aquaria, lecture-room, library, and reading-room. The equipment includes the best Zeiss microscopes, the higher apochromatic objectives, optical instruments, Leitz dissecting stands, and other apparatus for advanced morphological work. The teaching collections include a large series of the Naples marine types, the injected Vertebrate Series of Fric and Muller, a full set of standard and specially prepared charts, and a variety of living animals and plants contained in fresh-water and marine aquaria.

The departmental library, a part of the university library kept in the

laboratory, the gift of Charles H. Senff, is a memorial to the late Dr. Northrop, and embraces full sets of the standard biological works, including the journals and a rapidly increasing collection of memoirs and special monographs. A fund is available for the purchase of literature needed in connection with the special researches of students. Forty-three of the current biological journals are subscribed for. One of the special features of the department is the Morphological Club, open to instructors and all advanced students of biology, and meeting every week in the library to report upon special investigations and to present abstracts of special articles. The more important papers published from the laboratory are collected and reissued in *Biological Contributions from Columbia College: Zoölogy*. Another feature in advanced instruction is connected with the biological section of the New York Academy of Sciences, which affords opportunities for the public reading, discussion, and printing of scientific papers.

The summer study of marine zoölogy is provided for in the connection of the department with the Marine Biological Laboratory at Wood's Holl, Mass., including subscription for an investigator's room; also in special expeditions to various localities along the coast. The Western palæontological collections in the American Museum of Natural History are open to certain advanced students of vertebrate morphology.

## Botany

NATHANIEL LORD BRITTON, E.M., Ph.D.....	<i>Professor</i>
CARLTON C. CURTIS, Ph.D.....	<i>Assistant</i>
JOHN KUNKEL SMALL, A.B., Ph.D.....	<i>Curator</i>

## General Statement

Of the courses offered by the department, course III is required of first-year students in the School of Mines in the courses in Chemistry, Civil Engineering, Mining Engineering, and Geology; course IV of second-year students in the same school in the course in Geology; course V of third-year students in the same course; and course VI of fourth-year students in the same course.

Courses I and II are elective for juniors and seniors in the School of Arts and fourth-year students in the School of Medicine; courses IV, V, VI, and VII for seniors in the School of Arts and university students; and Course III for seniors in the School of Arts and fourth-year students in the School of Medicine.

Courses VII to XIII are primarily for university students.

## Courses

I—ELEMENTARY BOTANY, LONGER COURSE—Study of botany in its broadest sense, including introduction, plant anatomy, plant physiology, systematic botany in the biological sequence of the groups, morphology of the flowering plants, and a review of palæobotany. Text-book: to be assigned. 1 hour lecture and 4 hours (2 afternoons) laboratory work. Professor BRITTON and Dr. CURTIS

II—ELEMENTARY BOTANY, SHORTER COURSE—Same lectures as Course I. Text-book: to be assigned. 1 hour lecture and 2 hours (1 afternoon) laboratory work. Professor BRITTON and Dr. CURTIS

III—GENERAL BOTANY—Description of the principal features of plant physiology and anatomy, and of the principal characteristics of the sub-kingdoms and classes. 1 hour. Professor BRITTON

IV—PLANT ANATOMY AND PHYSIOLOGY—Study of the principal characteristics of vegetable cells and tissues. Text-book: Goodale's *Physiological Botany*. Pre-requisite: courses I or II, or their equivalent. 4 hours laboratory work. Dr. CURTIS

V—MORPHOLOGY AND DETERMINATION OF THE FLOWERING PLANTS—Dissection and examination of not less than one hundred species of flowering plants selected by the professor, followed by a systematic study of types of the natural families taken in biological sequence. Text-books: Gray's *Structural Botany* and *Manual of Botany*. Pre-requisite: courses I or II, or their equivalent. 4 hours laboratory work and conferences. Professor BRITTON

VI—ECONOMIC BOTANY—Description of drug-plants, food-plants, fibre-plants, and timber-trees, and other plants of economic importance and their products. Pre-requisite: courses I, II, or III, or their equivalent. 1 hour. Professor BRITTON

VII—CRYPTOGAMIC BOTANY—Description of the classes and principal families of Protophyta, Thallophyta, Bryophyta, and Pteridophyta, with examination of types selected by the professor. Text-book: Bennett and Murray's *Cryptogamic Botany*, and Vine's *Text-book of Botany*. Pre-requisite: courses I, II, or their equivalent. 1 hour lecture or conference and 4 hours laboratory work. Professor BRITTON and Dr. CURTIS

Open to candidates for the degree of A.M. whose minor subject is Botany.

VIII—ADVANCED PLANT ANATOMY—Critical study of the cells and tissues of some plant or plants selected. Text-book: De Bary's *Comparative Anatomy of Phanerogams and Ferns*. Pre-requisite: course IV, or its equivalent. At least 4 hours laboratory work. Dr. CURTIS

Open to candidates for the degree of A.M. whose minor subject is Botany.

IX—THE NATURAL FAMILIES OF FLOWERING PLANTS—Study of the diagnostic characters of the families in biological sequence. Reference books: Engler and Prantl's *Natürliche Pflanzenfamilien* and Baillon's *Histoire des Plantes*. Pre-requisite: course V. 1 hour conference and 4 hours laboratory work. Dr. SMALL.

Open to candidates for the degree of A.M. whose major subject is Botany.

X—ADVANCED CRYPTOGRAMIC BOTANY—Supplementary to Course VII. 1 hour lecture or conference and 4 hours laboratory work. Professor BRITTON and Dr. CURTIS

Open to candidates for the degree of A.M. whose major subject is Botany.

XI—COMPARATIVE STUDY OF THE TISSUES OF NOT LESS THAN TEN SPECIES OF PLANTS OF THE SAME GENUS OR FAMILY—Not less than 8 hours laboratory work for two years. Research. Professor BRITTON and Dr. CURTIS

Open to candidates for the degree of Ph.D. whose major subject is Botany.



XII—COLLECTION, DETERMINATION, AND COMPARATIVE STUDY OF THE PLANTS OF SOME RESTRICTED AREA—Field, herbarium, and laboratory work. Not less than 8 hours for two years ; field work during two summers. Research. Professor BRITTON

Open to candidates for the degree of Ph.D. whose major subject is Botany.

XIII—CRITICAL STUDY OF A FAMILY OR GENUS OF PLANTS OF NOT LESS THAN FIFTY SPECIES—Field, herbarium, and laboratory work. Not less than 8 hours for two years. Research. Professor BRITTON

Open to candidates for the degree of Ph.D. whose major subject is Botany.

NOTE—Any two of Courses VII, VIII, IX, or X may be taken as a minor for the degree of Ph.D.

### Equipment

The botanical laboratory is situated on the upper floor of the School of Mines laboratory building. It is fitted up with tables and cases, and is equipped with compound and dissecting microscopes and accessories and other apparatus for study and investigation. There is a large collection of microscopic preparations. The courses of instruction are illustrated by extensive series of models, charts, and lantern slides. A greenhouse for the cultivation of plants used in instruction is located on the new university site.

The herbarium contains about 550,000 specimens, being one of the largest in America ; additions are at present made to it at the rate of about 20,000 specimens a year. It comprises : (1) The collection accumulated by Dr. Torrey, which came into the possession of the University at his death in 1873. (2) The collection of Professor C. F. Meisner of Basle, Switzerland, presented to the University about the time of Dr. Torrey's death by Mr. John J. Crooke. (3) The collections of Dr. A. W. Chapman of Appalachicola, Florida, presented by Mr. Crooke at the same time, containing the types illustrating Dr. Chapman's *Flora of the Southern United States*. (4) The mosses of the late C. F. Austin. (5) The mosses of the late Dr. J. G. Jaeger, recently acquired. (6) Miscellaneous accumulations since Dr. Torrey's death, now making up more than one third of the whole collection. The herbarium is rich in types of species described by Dr. Torrey, Professor Meisner, Dr. Chapman, Dr. Asa Gray, Mr. Austin, Professor Britton, Dr. Morong, Professor Rusby, and Dr. Small. The various collections are now all arranged in a single series, but each sheet is identified by a designative label or stamp. There are also extensive collections of fruits, seeds, woods, and material illustrating economic botany, placed in cases and drawers.

The portion of the university library classified under botany is shelved in the room containing the herbarium. It now contains 3700 bound volumes and about 5000 pamphlets and extracts. These numbers do not, however, represent the whole reference strength of the collection, for all general works, scientific journals, and publications of general scientific societies are shelved in the main library. All the regularly published journals devoted to botany are received, and the sets of most of them are complete.

## Chemistry

*(Including Microscopy and Microbiology)*

CHARLES F. CHANDLER, Ph.D., M.D., LL.D.....	<i>Professor</i>
PIERRE DE PEYSTER RICKETTS, E.M., Ph.D.....	<i>Professor</i>
CHARLES E. COLBY, E.M., C.E.....	<i>Adjunct Professor</i>
CHARLES ERNEST PELLEW, E.M.....	<i>Demonstrator</i>
JOSEPH ALBERT DEGHUÉE, Ph.D.....	<i>Assistant Demonstrator</i>
JAMES S. C. WELLS, Ph.D.....	<i>Instructor</i>
ALEXIS A. JULIEN, A.M., Ph.D.....	<i>Instructor</i>
FERDINAND G. WIECHMANN, Ph.D.....	<i>Instructor</i>
LOUIS H. LAUDY, Ph.D.....	<i>Tutor</i>
HENRY C. BOWEN.....	<i>Tutor</i>
HERMANN T. VULTÉ, Ph.D.....	<i>Tutor</i>
EDMUND H. MILLER, A.M., Ph.D.....	<i>Tutor</i>
ALEXANDER R. CUSHMAN, Ph.D.....	<i>Assistant</i>
MARSTON T. BOGERT, A.B., Ph.D.....	<i>Assistant</i>
WINFIELD JOHNSON, Ph.G.....	<i>Assistant</i>
SAMUEL A. TUCKER, Ph.B.....	<i>Assistant</i>
CLARK G. VOORHEES, A.M.....	<i>Honorary Assistant</i>

## Courses in Chemistry

I—GENERAL INORGANIC CHEMISTRY—Introduction. Laws of Chemical combination, history, occurrence, preparation and properties of the elements and their principal compounds. Text-book: Newth's Inorganic Chemistry. 2 lectures and 1 recitation or 1 laboratory exercise. Professor CHANDLER, Dr. WIECHMANN, and Dr. VULTÉ

Required of all first-year students in the School of Mines except students in the course of Architecture. Open as an elective to sophomores, juniors, and seniors in the School of Arts; with two lectures and one afternoon in the laboratory.

II—PHYSICS AND GENERAL CHEMISTRY—Text-books: Ganot's Physics, Barker's Physics, and Newth's Inorganic Chemistry. 4 lectures during the first and 3 lectures during the second term. Professor CHANDLER

Required of first- and second-year students in the School of Medicine. Open as an elective to seniors in the School of Arts.

III—CHEMICAL PHYSICS—Text-book: Wiechmann's Lecture Notes on Theoretical Chemistry. 2 hours lectures and recitations first term. Dr. WIECHMANN

Required of first-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open as an elective to seniors in the School of Arts.

IV—STOICHIOMETRY—Text-book: Wiechmann's Lecture Notes on Theoretical Chemistry. 2 hours lectures and recitations second term. Dr. WIECHMANN

Required of first-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open as an elective to seniors in the School of Arts.

V—CHEMICAL PHILOSOPHY—Energy and energy forms, chemical energy, photo-chemistry, thermo-chemistry, electro-chemistry. Text-book: Wiech-

mann's Lecture Notes on Theoretical Chemistry. 2 hours lectures and recitations. Dr. WIECHMANN

Required of second-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open to candidates for the degree of A.M. and Ph.D. whose minor subject is Chemistry. Pre-requisite: Course IV.

VI—THEORETICAL CHEMISTRY, ADVANCED COURSE—History of chemical theory. Study of selected problems in theoretical chemistry. Scientific principles of chemical analysis. Physico-chemical methods. 4 hours lectures and conferences. Dr. WIECHMANN

Open to candidates for the degree of Ph.D. whose minor subject is Chemistry. Pre-requisite: Courses IV and V.

VII—PREPARATION OF INORGANIC COMPOUNDS, SHORT COURSE—Laboratory work 5 afternoons and one conference during the last half of the second term. Text-book: Vulté and Neustadt's Laboratory Manual of Inorganic Preparations. Dr. VULTÉ

Required of third-year students in the course of Analytical and Applied Chemistry in the School of Mines.

VIII—PREPARATION OF INORGANIC COMPOUNDS, LONG COURSE—8 hours and one conference. Bender and Erdmann's Chemische Präparatenkunde. Dr. VULTÉ

Open to candidates for the degree of A.M. whose major subject is Chemistry.

IX—QUALITATIVE ANALYSIS—Lectures, recitations, and laboratory practice. Text-books: Fresenius' Qualitative Analysis; Wells' and Cushman's Schemes for Qualitative Analysis. 2 lectures, 2 recitations, and laboratory practice of at least 8 hours. Dr. WELLS and Dr. CUSHMAN

Required of first-year students in the School of Mines in the courses of Mining Engineering, Electrical Engineering, Metallurgy, Geology and Palæontology, and Analytical and Applied Chemistry. Open to seniors in the School of Arts. Pre-requisite or parallel: Course I.

X—INVESTIGATION OF NEW METHODS OF QUALITATIVE AND QUANTITATIVE ANALYSIS—Conferences and laboratory practice at least 10 hours. Professor RICKETTS and Dr. WELLS

Open to candidates for the degree of A.M. whose major subject is Chemistry. Pre-requisite: Courses I and IX.

XI—THE SPECTROSCOPE AS APPLIED TO QUALITATIVE AND QUANTITATIVE ANALYSES—Laboratory practice and conferences with the instructors, 8 hours. Professor RICKETTS and Dr. WELLS

Open to candidates for the degree of A.M. whose minor subject is Chemistry.

XII—CHEMICAL REACTIONS, QUALITATIVELY AND QUANTITATIVELY CONSIDERED—Conferences and laboratory practice at least 8 hours. Dr. WELLS and Mr. BOWEN

Open to candidates for the degree of A.M. whose major subject is Chemistry.

XIII—QUANTITATIVE ANALYSIS—Text-books: Cairns' Quantitative Analysis and Fresenius' Quantitative Analysis. 2 lectures and 2 recitations and laboratory practice 15 hours throughout the second year and one session of the third year. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

Required of second- and third-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open to candidates for the degree of A.M. whose major subject is Chemistry.

XIV—QUANTITATIVE ANALYSIS—Text-books: Cairns' Quantitative Analysis and Fresenius' Quantitative Analysis. 1 lecture, 1 recitation during the second year, and laboratory practice 15 hours during the second year and the second term of the third year. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ  
Required of second- and third-year students in the course of Metallurgy in the School of Mines.

XV—QUANTITATIVE ANALYSIS—Text-books: Cairns' Quantitative Analysis and Fresenius' Quantitative Analysis. 1 lecture, 1 recitation, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

Required of fourth-year students in the course of Geology and Palæontology in the School of Mines.

XVI—QUANTITATIVE ANALYSIS—Text-books: Cairns' Quantitative Analysis and Fresenius' Quantitative Analysis. 1 lecture, 1 recitation, and 15 hours laboratory practice during the second term of the second year. Professor RICKETTS and Dr. MILLER

Required of second-year students in the courses of Mining and Electrical Engineering in the School of Mines, but limited to 1 lecture and 3 hours per week for Electrical Engineers.

XVII—SPECIAL VOLUMETRIC METHODS OF QUANTITATIVE ANALYSIS—Conference and laboratory work at least 8 hours. Professor RICKETTS

Open to candidates for the degree of A.M. whose major subject is Chemistry.

XVIII—REVISION OF CONSTANTS EMPLOYED IN PROXIMATE ANALYSES—Conferences and laboratory work at least 12 hours. Professor RICKETTS and Dr. VULTÉ

Open to candidates for the degree of Ph.D. whose major subject is Chemistry.

XIX—SPECIAL METHODS FOR THE ANALYSIS OF PLANTS AND THEIR PRODUCTS—Fibres, starches, sugars, oils. Conferences and laboratory work at least 12 hours. Research. Professor RICKETTS and Dr. VULTÉ

Open to candidates for the degree of Ph.D. whose major subject is Chemistry.

XX—ELECTROLYTIC ANALYSIS, QUALITATIVE AND QUANTITATIVE—Conferences and laboratory work at least 12 hours for 2 years. Research. Professor RICKETTS and Dr. WELLS

Open to candidates for the degree of Ph.D. whose major subject is Chemistry.

XXI—ASSAYING—Ores and metallurgical products. Text-book: Ricketts' Notes on Assaying. 2 lectures, 2 recitations, and laboratory practice 15 hours during the first term of the third year. Professor RICKETTS and Dr. MILLER

Required of third-year students in the courses of Mining Engineering, Metallurgy, Geology and Palæontology, and Analytical and Applied Chemistry in the School of Mines during the first session.

XXII—SPECIAL AND QUICK METHODS OF ASSAYING ORES, METALS, AND FURNACE PRODUCTS—Conferences and laboratory work 15 hours for one term. Professor RICKETTS and Dr. MILLER

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXIII—ORE TESTING FOR THE PROPER SELECTION OF METHODS OF TREATMENT—Conferences and laboratory practice one afternoon for one half of the second term. Professor RICKETTS and Dr. MILLER

Required of fourth-year students in the courses of Metallurgy and Mining Engineering.

XXIV—ORGANIC CHEMISTRY, ELEMENTARY COURSE—Lectures 4 hours a week throughout the year. Text-book : Bernthsen's *Kurzes Lehrbuch der organischen Chemie*. Professor COLBY

Minor for the degree of A.M. Pre-requisite: Courses I, III, IV, V.

XXV—GENERAL ORGANIC CHEMISTRY—Lectures and recitations 6 hours a week, and laboratory practice at least 18 hours a week throughout the year. In this course the subject is fully treated and the student prepares in the laboratory a large number of organic compounds, besides making elementary analyses and molecular weight determinations. Text-books : Bernthsen's *Kurzes Lehrbuch der organischen Chemie*, Levy's *Organische Präparate*, Gattermann's *Praxis der organischen Chemikers*. Professor COLBY and Mr. BOGERT

Required of fourth-year students in the course of Analytical and Applied Chemistry in the School of Mines.

Major for the degree of A.M. Pre-requisite : Courses I, III, V, VIII, IX, XIII.

XXVI—ADVANCED ORGANIC CHEMISTRY, MINOR COURSES—Any one of the following subjects : (1) Studies in thermo-chemistry ; (2) Physical properties of organic compounds as related to their molecular constitution ; (3) Dissociation coefficients of organic acids ; (4) Chemical Dynamics ; (5) The terpenes and camphors ; (6) Synthetic alkaloids ; and such other subjects as may be selected. Personal instruction and laboratory work not less than 12 hours a week. Professor COLBY and Mr. BOGERT

Minor for the degree of Ph.D. Pre-requisite : Course XXV.

XXVII—ADVANCED ORGANIC CHEMISTRY, MAJOR COURSE—Original investigation and research. Subject to be assigned or approved by the professor. Personal instruction, conferences, private study and laboratory work. No definite number of hours a week. Professor COLBY and Mr. BOGERT

Major for the degree of Ph.D. Pre-requisite : Course XXV.

XXVIII—PHYSIOLOGICAL CHEMISTRY—Including the preparation and properties of the chief constituents of plants and animals. Text-book : Pellew's *Manual of Medical and Physiological Chemistry*. This course is given twice a year, and consists of 2 lectures and 2 afternoons in the laboratory for one term. Mr. PELLEW, Dr. DEGHUÉE, and Mr. TUCKER

Required of first-year students in the School of Medicine. Open as an elective to seniors in the School of Arts. Open to candidates in the degree of A.M. whose minor subject is chemistry.

XXIX—APPLIED CHEMISTRY, GENERAL COURSE—The subjects discussed are : (1) Air : nature, sources of contamination, sewer gas, plumbing, draining, disinfection, ventilation. (2) Water : composition of natural waters, pollution, disposal of sewage and house refuse. (3) Artificial illumination : candles, oils, and lamps, petroleum, gas, and its products, electric light. (4) Limes, mortars, and cements. (5) Building stones : decay and preservation. (6) Timber and its preservation : pigments, paints, essential oils, varnishes, preserving processes. (7) Explosives : gunpowder, gun-cotton, nitro-glycerine. (8) Glass and ceramics. (9) Electro-metallurgy. (10) Photography. Text-books : Park's *Hygeine* and Wagner's *Chemical Technology*. 3 lectures. Professor CHANDLER

Required of all second-year students in the School of Mines.



XXX—APPLIED CHEMISTRY, SPECIAL COURSE—The subjects discussed are : (1) Chemical manufactures : acids, alkalies, and salts. (a) Sulphur, sulphurous acid, hyposulphites, sulphuric acid, bisulphide of carbon. (b) Common salts, soda ash, hydrochloric acid, chlorine, binoxide of manganese, bleaching-powder, chlorates, chlorimetry. (c) Carbonate of potash, caustic potash. (d) Nitric acid and nitrates. (e) Iodine, bromide. (f) Sodium aluminium, magnesium. (g) Phosphorus, matches. (h) Ammonia salts. (i) Cyanides. (j) Alum, copperas, blue vitriol, salts of magnesia, baryta, strontia. (k) Borates, stannates, tungstates, chromates. (l) Salts of mercury and silver. (m) Oils, fats, soaps, and glycerine. (2) Food and drink : milk, cereals, starch, bread, meat, tea, coffee, sugar, fermentation, wine, beer, spirits, vinegar, preservation of food. (3) Clothing : textile fabrics, bleaching, dyeing, calico printing, paper, tanning, glue, india rubber, guttapercha. (4) Fertilizers : guano, superphosphates, poudrettes. Text-books : Wagner's Chemical Technology, Lunge's Manufacture of Sulphuric Acid and Soda ; Schultz & Julius' Kuenstlichen Organischen Farbstoffe ; Schultz' Chemie des Steinkohlentheers. 3 lectures and 1 recitation for two years ; one half the subject being discussed each year. Professor CHANDLER and Mr. PELLEW

Required of third- and fourth-year students in the course of Analytical and Applied Chemistry.

### Courses in Microscopy and Microbiology

XXXI—MICROSCOPY, SHORT COURSE—Simple and compound lenses, stands, construction, variety, choice, use, and care ; objectives and oculars, optical principles, variety, care ; method of work, illumination ; the eyes, peculiarities, proper use, protection ; drawing, freehand, with camera lucida ; projection by mirror and by prism ; magnification, and micrometry ; mounting, dry, in solid and in liquid media ; section cutting and staining : textile fibres ; foods and adulterants ; micro-chemistry ; general accessory apparatus. Two exercises of 2 hours each. Dr JULIAN

Required of students in the courses of Geology and Palæontology, and Analytical and Applied Chemistry in the second year in the School of Mines.

XXXII—MICROSCOPY, LONG COURSE—Early history, higher optics, special accessories, and microscopical technique as above specified ; section cutting with microtome, soft and hard tissues, crystals, rock sections, and loose grains, double staining, micro-refractometry, and homogeneous immersion fluids ; micro-spectroscopy and blood examination ; micro-mineralogy and micro-lithology ; vegetable and animal fibres ; paper, ink, and handwriting ; urinary deposits ; photo-micrography. 4 hours two years. Dr. JULIEN.

Open to candidates for the degree of A.M. whose major subject is Chemistry, and for Ph.D. whose minor subject is Chemistry.

XXXIII—MICRO-CHEMISTRY, GENERAL TECHNIQUE—Salts of ten elements ; micro-toxicology, spectroscopy, and blood ; micro-refractometry. 2 hours. Dr. JULIEN

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXXIV—THE EXAMINATION OF FOODS AND DRUGS, GENERAL TECHNIQUE—Study of pure and adulterated foods and drugs. 2 hours. Dr. JULIEN

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXXV—THE STRUCTURE OF BUILDING MATERIALS, GENERAL TECHNIQUE—Rock-forming minerals, building stones, brick, and terra-cotta ; timber ; cast and wrought iron and steel. 4 hours. Dr. JULIEN

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXXVI—PHOTO-MICROGRAPHY, GENERAL PHOTOGRAPHY—Apparatus and lenses, light, color, sensitive plates, exposure, development and printing. 4 hours. Dr. JULIEN

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXXVII—MICROBIOLOGY—The use of high-power lenses, refraction images, adjustable collar, and immersion fluids, in the study of unicellular organisms, yeasts, amœbæ, infusoria, moulds, algæ and fungi of fresh waters ; fauna of potable waters ; general bacteriology, and the preparation of culture media ; examination of bacteria, staining, mounting ; air bacteria, examination of air of class-rooms ; water bacteria : biological examination of Croton water, colonies, culture and identification of species. Two exercises of 2 hours. Dr. JULIEN

Required of the third-year students in the course of Geology and Palæontology and Analytical and Applied Chemistry in the School of Mines.

XXXVIII—BACTERIOLOGY, LONG COURSE—Including: (a) General bacteriology, laboratory methods and technique, culture media, isolation of species in colonies, cultures, and identification. (b) Biological analyses of air and potable waters ; bacteria of sewage, of typhoid fever, and of Asiatic cholera ; bacteriological tests of disinfectants and germicides, and of water filters. Required 4 hours for two years. Dr. JULIEN

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Chemistry.

XXXIX—BREWER'S YEAST, GENERAL TECHNIQUE—Yeasts of malt, cider, and wines ; isolation of pure cultures ; trial of efficiency, and study of the products of fermentation ; examination of commercial samples. Required 4 hours. Dr. JULIEN

Open to candidates for the degree of A.M. whose major subject is Chemistry, and for the degree of Ph.D. whose minor subject is Chemistry.

### Course in Toxicology

XL—TOXICOLOGY—The preparation and detection of the more important mineral and vegetable poisons. Fifteen weekly lectures and fourteen laboratory exercises of 2 hours each. The course is given twice during the year, the class being divided into four sections, two of which pursue the subject during the first session, the other two sections during the second session. Mr. PELLEW, Mr. JOHNSON, and Mr. TUCKER

Open for second-year students in the School of Medicine during the session of 1894-95 ; required of second-year students in the School of Medicine after that date.

### Equipment

AT THE 49TH STREET BLOCK

There is a chemical lecture-room at the School of Mines fully supplied with apparatus and instruments and all modern facilities for the experimental illustration of the different lecture courses.



The museum of general inorganic and organic chemistry, and of the chemical arts, contains the elements and all their more important compounds; representative sets of specimens of all classes of organic compounds, materials, and products illustrating the chemical arts, together with models, pictures, and diagrams.

The qualitative laboratory is provided with tables, re-agents, and all the necessary facilities to enable each student to become familiar with the reactions of the different metals and salts. The student is required to repeat all the experiments of the course of instruction at his own table in this laboratory. When he has acquired a thorough experimental knowledge of a group of bases, single members of the group, or mixtures, are submitted to him for investigation. He thus proceeds from simple to complex cases, till he is able to determine the composition of the most difficult mixtures. Whenever necessary, he uses the spectroscopic in his work.

The quantitative laboratory is provided with tables, re-agents, and all necessary apparatus and instruments to enable the student to actually execute with his own hands quantitative analyses. He first analyzes substances of known composition, such as crystallized salts, that the accuracy of his work may be tested by the comparison of his results with the true percentages. He is then required to make analyses of materials occurring in commerce, or in the application of technical sanitary chemistry, metallurgy, and the like, as ores, fertilizers, and waters.

The laboratory for general inorganic chemistry—A portion of one of the laboratories is set apart for the use of the students pursuing the course, and they are provided with the apparatus necessary to enable them to repeat all of the simpler experiments in general chemistry, such as the preparation of gases.

Laboratory for the preparation of inorganic compounds—A portion of one of the laboratories is set apart for the use of students pursuing courses VII and VIII, and is provided with the necessary apparatus and materials.

The organic laboratory is especially provided with all necessary apparatus and instruments for the determination of boiling points, melting points, specific gravities, vapor densities, for proximate and elementary analyses, and for the synthetic preparation of organic compounds.

The assay laboratory is provided with crucible, roasting and muffle furnaces for the fire assay of ores; also with sampling tables, stamp mill, amalgamators, and the like, for ore testing on a larger scale and with the necessary rolls and other apparatus for the wet assay of bullion.

The laboratories for microscopy and microbiology are situated in the upper story of the main building of the School of Mines, and are well lighted from the sides and from skylights. They are fully equipped with microscope stands for the use of the students, and with all apparatus and re-agents required for microscopical manipulations for those branches of biological study which are needed in sanitary and bacteriological investigations and for photo-micrography. There is a culture room for bacterial growths, a dark room for photo-micrographic work, culture baths, and sterilizing ovens, and the more important apparatus required in special investigations. The projection lantern with the electric light is in common use, and work tables are supplied with in-

candescent lights. The interesting and extensive collection of microscopes and microscopic accessories and objects, bequeathed to the college by its late President, Dr. Barnard, are preserved in a glass case in this laboratory.

AT THE SCHOOL OF MEDICINE AT 437 WEST 59TH STREET

There is a physical and chemical lecture room, fully supplied with apparatus, instruments, and specimens for the illustration of the lectures on these subjects.

There is also a chemical Laboratory fully equipped with chemical apparatus, microscopes, and other instruments, in which the students practice the processes of medical and physiological chemistry.

## Civil Engineering

(See page 59)

## Diseases of Children

ABRAHAM JACOBI, M.D.....	<i>Clinical Professor</i>
FRANCIS HUBER, M.D.....	<i>Chief of Clinic</i>
JOSEPH HUBER, M.D.....	<i>Clinical Assistant</i>
F. S. McHALE, M.D.....	<i>Clinical Assistant</i>
LOUIS M. SILVER, M.D.....	<i>Clinical Assistant</i>
F. BIERHOFF, M.D.....	<i>Clinical Assistant</i>

### Courses

I—CLINICAL LECTURES AT THE VANDERBILT CLINIC UPON THE DISEASES OF CHILDREN—I hour. Professor JACOBI

Required, in the third year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF CHILDREN—10 lessons for each student. Dr. FRANCIS HUBER

Optional, in the third year, for candidates for the degree of M.D.

III—HOSPITAL CLINIC—Bellevue Hospital, Mondays, 2.30 P.M., from April to June. Professor JACOBI

Optional.

## Dermatology

GEORGE HENRY FOX, M.D.....	<i>Clinical Professor</i>
GEORGE THOMAS JACKSON, M.D.....	<i>Chief of Clinic</i>
CHARLES C. RANSOM, M.D.....	<i>Clinical Assistant</i>
JOHN CABOT, M.D....	<i>Clinical Assistant</i>
J. H. P. HODGSON, M.D.....	<i>Clinical Assistant</i>
JOHN ALDRICH, M.D.....	<i>Clinical Assistant</i>
CHARLES T. DADE, M.D.....	<i>Clinical Assistant</i>

### Courses

I—CLINICAL LECTURES AT THE VANDERBILT CLINIC UPON THE DISEASES OF THE SKIN—I hour. Professor FOX.

Required, in the fourth year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF THE SKIN—12 lessons for each student. Dr. JACKSON

Optional, in the fourth year, for candidates for the degree of M.D.

## Economics and Social Science

RICHARD MAYO-SMITH, Ph.D.....	<i>Professor</i>
EDWIN ROBERT ANDERSON SELIGMAN, LL.B., Ph.D.....	<i>Professor</i>
FRANKLIN HENRY GIDDINGS, A.M.....	<i>Professor</i>
JOHN BATES CLARK, Ph.D.....	<i>Professor</i>
JOHN FRANKLIN CROWELL, A.B.....	<i>Lecturer</i>
MAX WEST, Ph.D.....	<i>Lecturer</i>
LEONARD WILLIAMS HATCH, A.M.....	<i>Lecturer</i>
WILLIAM ZEBINA RIPLEY, Ph.D.....	<i>Prize Lecturer</i>
ARTHUR M. DAY, A.M.....	<i>Assistant</i>

### General Statement

The courses offered fall into two divisions: Political Economy and Finance, and Sociology and Statistics. Courses I (A) and II are the general introductory courses primarily intended for juniors in the School of Arts. Courses III and V are intended to give a general survey, respectively, of political economy and finance, from the historical and comparative point of view. While serving as useful courses for those intending to specialize still further in economics or sociology, they are especially recommended to those who desire to secure some knowledge of political economy as a part of a liberal education. Courses I to VIII will be found of especial value to law students seeking to supplement their purely legal studies. Course XVI is an introductory course leading up to course XX. Course XX is the general systematic course laying the basis for the other courses in applied sociology. Courses XVI to XXIII, together with courses III and IV, will be of value to students of theology who wish to extend their knowledge of the social problems of the day.

In addition to the regular courses, there are five seminaria, organized to furnish students opportunity for special investigation and original research. The preliminary seminarium in political economy (XII) is intended for seniors and those students who have had only one year in economics. The other seminaria are for advanced students. Every candidate for the degree of Master of Arts or Doctor of Philosophy, taking his major subject in this department, must work in at least one of the seminaria.

The allied courses in history and public law will be found extremely useful for the students of social science, because of the close interrelations of history, law, and economics. Taken together these courses constitute a complete scheme of political science.

Course I (A) is required of juniors in the School of Arts. Course II is open to juniors in the School of Arts. Courses III, V, VI, and XVI are open to seniors in the School of Arts and other candidates for the degree of A.B. The remaining courses are intended for university students.

**Courses in Political Economy and Finance**

I (A)—ELEMENTS OF POLITICAL ECONOMY—Walker's Political Economy—Recitations and essays. 2 hours, second term. Professor MAYO-SMITH and Mr. DAY

II—ECONOMIC HISTORY—Selected text-books, recitation, essays, and lectures. 2 hours, first term. Mr. DAY

III—HISTORICAL AND PRACTICAL POLITICAL ECONOMY—Lectures, discussions, and reading. 3 hours. Professor MAYO-SMITH

IV—HISTORY OF POLITICAL ECONOMY—Lectures, discussions, and readings. 2 hours. Professor SELIGMAN

[To be given in 1896-7, and every alternate year thereafter.]

V—SCIENCE OF FINANCE—Lectures and private reading. 2 hours. Dr. WEST (in absence of Professor SELIGMAN)

VI—FINANCIAL HISTORY OF THE UNITED STATES—Lectures and private reading. 2 hours, second term. Mr. HATCH (in absence of Professor SELIGMAN)

VII—TARIFF HISTORY OF THE UNITED STATES—Lectures and private reading. 2 hours, first term. Professor SELIGMAN

[To be given in 1896-7 and every alternate year thereafter.]

VIII—RAILROAD PROBLEMS—Lectures and private reading. 2 hours, second term. Mr. CROWELL (in absence of Professor SELIGMAN)

IX—ECONOMIC THEORY I—THE STATIC LAWS OF DISTRIBUTION—Lectures, discussions, and private reading. 2 hours, first term. Professor CLARK

X—ECONOMIC THEORY, II—THE DYNAMIC LAWS OF DISTRIBUTION—Lectures, discussions, and private reading. 2 hours, second term. Professor CLARK

XI—COMMUNISTIC AND SOCIALISTIC THEORIES—Lectures, discussions, and private reading. 2 hours, first term. Professor CLARK

XII—PRELIMINARY SEMINARIUM IN POLITICAL ECONOMY—Essays, discussions, and private reading. 2 hours. Mr. DAY

XIII—SEMINARIUM IN POLITICAL ECONOMY—2 hours bi-weekly. For advanced students. Professor MAYO-SMITH

XIV—SEMINARIUM IN POLITICAL ECONOMY AND FINANCE. For advanced students. 2½ hours bi-weekly. Dr. WEST

XV—SEMINARIUM IN POLITICAL ECONOMY—For advanced students. 2 hours bi-weekly. Professor CLARK

**Courses in Sociology and Statistics**

XVI—PHYSICAL GEOGRAPHY AND ANTHROPOLOGY—Lectures and private reading. 2 hours. Dr. RIPLEY

XVII—STATISTICS AND SOCIOLOGY—Lectures, illustrations, and private reading. 2 hours, first term. Professor MAYO-SMITH

XVIII—STATISTICS AND ECONOMICS—Lectures and private reading. 2 hours, second term. Professor MAYO-SMITH

XIX—THEORY OF STATISTICS—Lectures and private reading. 2 hours, second term. Professor MAYO-SMITH

[To be given in 1896-7 and every alternate year thereafter.]

XX—GENERAL SOCIOLOGY—Lectures and private reading. 2 hours, first term. Professor GIDDINGS

XXI—THE EVOLUTION OF THE FAMILY—Lectures and private reading. 2 hours, second term. Professor GIDDINGS

XXII—PAUPERISM, POOR LAWS, AND CHARITIES—Lectures and private reading. 2 hours, first term. Professor GIDDINGS

XXIII—CRIME AND PENOLOGY—Lectures and private reading. 2 hours, second term. Professor GIDDINGS

XXIX—WORK IN THE STATISTICAL LABORATORY—Exercises in analyzing, criticising, and tabulating statistics. Professor MAYO-SMITH

XXX—SEMINARIUM IN SOCIOLOGY—2 hours, bi-weekly. Professor GIDDINGS

### Equipment

The library facilities are unexcelled. Every journal of importance, American or foreign, dealing with economics or social science, is taken regularly by the library. Any book needed by advanced students can usually be bought at once. The special library of history and political science comprises about sixty-five thousand volumes.

Students of economics and social science will find New York to be a centre of library facilities absolutely unrivalled elsewhere in this country. In addition to the university library, there are rich treasures at the Astor Library, Lenox Library, New York Historical Library, Long Island Historical Library, Library of the Charity Organization Society, the Bar Association Library, and the Law Institute Library, to each of which students have access under favorable conditions. Advanced students also have at their disposal the library of the professor of political economy and finance, which contains the most complete collection of works on political economy to be found in the United States.

The facilities offered to students of sociology include a large library of general and special works, and unusual opportunities for field work. A gift of \$5000 for works on sociology has provided a very complete equipment of publications on sociological theory, the history of the family, pauperism, crime, and penology. Arrangements have been made with the Charity Organization Society, the University Settlement, the East-Side House, and the Brooklyn Bureau of Charities by which students can become fully acquainted with actual work among the people and with the most perfect methods.

### Education

(See page 115)



## Electrical Engineering

(See page 63)

## Engineering

### CIVIL ENGINEERING

WILLIAM HUBERT BURR, C.E. ....	<i>Professor</i>
ANDREW ERNEST FOYÉ, C.E. ....	<i>Instructor</i>
GUSTAVE R. TUSKA, M.S., C.E. ....	<i>Tutor</i>
ADOLPH BLACK, C.E. ....	<i>Assistant</i>

### General Statement

The work in the Department of Civil Engineering is designed to afford a thorough analytical training, as well as numerous and extended practical exercises in those matters pertaining to the profession of the civil engineer, both in regard to all classes of structures and in connection with the various developments and applications of power. Its broad character also adapts it in a marked manner to the needs of those who desire advanced educational training as a preparation for callings not wholly included in the profession of Civil Engineering, but which to some extent are related to it. The theoretical portion of the instruction is based largely upon the courses given in the departments of Mathematics, Mechanics, and Physics, and the results obtained are applied to practical engineering work. Special stress is laid upon the design by the student of the various structures and machines which the civil engineer is called upon either to construct, or the operation of which he is required to direct, in the practice of his profession. The instruction is given by lectures, demonstrations by the students, and frequent conferences, co-ordinate with which the work of design is continuously carried on. Courses I to XVII inclusive are required of all students in Civil Engineering. Courses I, V, VI, XV, XVI, and XVII, are required of all students in Mining Engineering and Metallurgy. Course V is required of all students in Electrical Engineering. All courses are open as electives to any students who have had the requisite preparation to take them.

### Courses

I—THEORY OF SURVEYING—Compass surveying—Farm surveying with preliminary work—Computations. Lectures and recitations 2 hours first term, first year. Reference books : Johnson's Theory of Surveying. Mr. FOYÉ and Mr. BLACK

II—ROAD ENGINEERING—Surveys and location of roads—Drainage and grades—Foundations—Selection and treatment of materials—Telford and McAdam pavements—City pavements of brick, Belgian and granite blocks, asphalt, cement, and concrete—Machinery and tools required in the construction of roads and pavements—Maintenance of roads and pavements—Elements of expense and total cost of construction and maintenance. Reference book :

Byrne's Highway Construction. Lectures and recitations. 2 hours first term, second year. Mr. TUSKA

III—WATER-SUPPLY ENGINEERING AND IRRIGATION—Rainfall and storage—Flow of streams—Influence of soils, elevation, and geological character of water-shed—Methods of supply, gravitation, pumping from rivers or natural underground storage, flow from the latter—Reservoir construction—Sedimentation and filtration—Distributing system—House supply and wastage—Irrigation of land—Amounts and periods of application—Construction of, and flow through, division and distributing canals. Reference books: Fanning's Water Supply and Wilson's Irrigation Engineering. Lectures and recitations 2 hours second term, second year. Mr. FOYÉ

IV—MASONRY STRUCTURES—Pressure and abutting power of earth—Design and construction of retaining walls—Stability of masonry structures in general—Stability of towers and chimneys under wind pressure—Theory and design of arches with vertical and inclined loads—Theory and design of reservoir walls, earth and high masonry dams—Cement, concrete, and masonry. Reference books: Cain's Retaining Walls and Baker's Masonry and Foundations. Lectures 1 hour during third year with frequent conferences and continuous work in design.  $2\frac{1}{2}$  hours of problem and design work are required in the drawing academy. Mr. TUSKA

V—ELASTICITY AND RESISTANCE OF THE MATERIALS OF ENGINEERING—Laws of elasticity in homogeneous materials—Co-efficients of elasticity—Relations between stresses and strains—Common and exact theories of torsion and flexure—Elastic limits, working stresses, and ultimate resistances of wrought-iron, cast-iron, steel, alloys, timbers, building stones, cement, concrete, and masonry—Complete treatment of simple and continuous beams—The design and construction of iron, steel, and timber columns and beams, including the design and construction of plate girders—Shafts—Cables—Fatigue of materials—Specifications. 3 hours lectures and recitations during the first term, and 2 hours during the second term, third year.  $7\frac{1}{2}$  hours first term, and 5 hours second term, of problem and design work, are required in the drawing academy. Reference and text-book: Burr's Elasticity and Resistance of Material. Professor BURR

VI—GRAPHIC STATICS—Equilibrium polygon, and polygonal frames for all systems of loads—Graphical representations of shears and moments for both non-continuous and continuous beams—Fixed and moving loads—Applications to bridge and railway trusses. 2 hours lectures during the second term, third year. 5 hours of problem and design work are required in the drawing academy. Mr. TUSKA

VII—ANALYTICAL THEORY OF TRUSSES—The truss element—Simple cantilever and non-continuous trusses with parallel chords—Fixed and moving loads—Through and deck spans—Positions of any system of concentrated moving loads for greatest chord and web stresses when chords are both parallel and not parallel—Combination of moment and graphic methods—Skew and irregular trusses—Applications to highway and railway trusses—Braced arches and arched ribs. 2 hours lectures during the second term, third year, with frequent con-



ferences and problems in computations of stresses and preparation of stress sheets. 5 hours of problem and design work are required in the drawing academy. Reference and text-book: Burr's Stresses in Bridge and Railway Trusses. Mr. TUSKA

VIII—SEWAGE DISPOSAL—Treatment and disposal of sewage and refuse of manufacturing—Sedimentation by gravity and by chemical purification—Treatment of effluent by continuous and intermittent sand filtration—Fertilization—Intermittent application to soil with under-drainage—Disposal of sludge—Theory and construction of sand filters—Plants for sewage treatment—Pollution of potable water and its purification by continuous and intermittent sand filtration—Design of sand filter for water purification. 2 hours lectures first term, third year. Professor BURR

IX—RAILROAD ENGINEERING—Economics of location, operation, and maintenance—Equating grades and curves—Estimating quantities and writing specification—Contracts—Track and switch work—Block and other systems of signalling—Buildings and structures—Organization. 3 lectures half of first term, and all of the second term, fourth year. Reference book: Wellington's Railway Location. Mr. FOYÉ

X—THE DESIGN AND CONSTRUCTION OF BRIDGES, ROOFS, AND BUILDINGS—Railway and highway bridges—Pin and riveted connections—Single and multiple systems of bracing—The design of details for bridges, roofs, and buildings—Floors for railway and highway bridges—The design and operation of draw-bridges, including engines, locking, lifting, and turning machinery—Cantilever structures—Wind loads and stresses—Single and double track viaducts or trestles in iron, steel, and timber—Lateral and transverse systems of bracing—The design and construction of elevated railroads—The complete designs of railway structures, with estimates of cost—The erection of iron, steel, and timber structures, including the costs of erection. 2 hours lectures and recitations, fourth year, with frequent conferences and continuous work in design. 5 hours of problem and design work are required in the drawing academy. Reference and text-book: Burr's Stresses in Bridge and Railway Trusses. Professor BURR

XI—FOUNDATIONS—Earth foundations—Foundations for buildings—Safe loads on masonry and foundation beds—Pile driving and pile foundations—Safe loads for piles—Protection and preservation of piles and timber—Sheet piling and coffer-dam methods—Pneumatic foundations and caisson work—Open dredging—Bridge piers of masonry and cylinders—Piers for deep foundations—Methods of working in quicksands—Tunneling. Reference books: Patton's Foundations and Baker's Masonry and Foundations. 2 hours lectures, fourth year, with frequent conferences and continuous work in design. 5 hours of problem and design work are required in the drawing academy. Professor BURR

XII—HYDRAULICS—Flow of water through orifices—Time required for discharge of canal locks and similar volumes—Weir discharge and gauging by weirs—Gauging of water for systems of irrigation—Flow through and discharge of pipes—Design of pipe systems for city water-works—The Venturi meter—

Flow in and discharge of open canals and rivers—Gauging of streams by current meters, floats, and other means—Backwater—Impulse of streams—The motion and flow of air and other gases in and through pipes and orifices. Reference book: Merriman's *Hydraulics*. 2 hours lectures during first term of fourth year, with frequent conferences and problems. Professor BURR

XIII—THE DESIGN AND CONSTRUCTION OF SEWERS, AND RIVER AND HARBOR IMPROVEMENTS—Sewage and surface drainage of cities and towns—Separate and combined systems of sewers—Capacities of mains and branches—Catch basins—Manholes—Chimneys or ventilators—Flush tanks—Outfalls—Grades—Flow or discharge of sewers—Construction—Jetty system of river improvements—Scouring action of currents—Erosion of river banks—Dams for improvement of river navigation—Breakwaters—Dykes—Groins—Buttress work—Docks—Harbor works—Iron piers—Estimates of cost. 2 hours lectures second term, fourth year, with frequent conferences. Professor BURR

XIV—THEORY OF RAILROAD SURVEYING—Simple, compound and reversed curves—Transition curves—Cross-section work—Earthwork computations—Office work. Lectures and practical problems. 1 hour, third year. Reference book: Searle's *Field Engineering*. Mr. FOYÉ

### The Summer School of Surveying

This school is conducted during ten to twelve weeks of each summer vacation at a point in the country near Litchfield, Conn., where ample facilities are provided for all requisite operations, and where the topography is admirably adapted to the practical work of surveying. The operations at the summer school include the entire actual surveying of the department of Civil Engineering, together with such lectures, computations, and mapping as pertain to it. About six weeks' continuous attendance is required of each class between the first and second, and the second and third years, and four weeks between the third and fourth years. The school possesses an unusually full equipment of engineer's and solar transits, levels, plane tables, compasses, and all accessories and smaller instruments. A corps of special assistants for each session aid the regular officers of the school. At each session the following courses are given:

XV—SURVEYING BETWEEN THE FIRST AND SECOND YEARS—Pacing, chaining, and ranging—Farm survey—Adjustment of instruments—Angle reading by repetition—Repetition traverse. Daily lectures, field and office work. Mr. FOYÉ

XVI—SURVEYING BETWEEN THE SECOND AND THIRD YEARS—Azimuth traverse—Levelling—Topographical survey with plane table—City surveys—Contour sketching. Daily lectures, field and office work. Mr. FOYÉ

XVII—SURVEYING BETWEEN THE THIRD AND FOURTH YEARS—Railroad surveying—Reconnaissance—Preliminary survey—Location—Cross-sectioning—Computations—A complete survey and location of a line two to five miles long are made, with all the attendant computations requisite for placing the work under contract. Daily lectures, field and office work. Mr. FOYÉ

A satisfactory Project or Thesis is required of every Candidate for the degree of Civil Engineer at graduation.

## ELECTRICAL ENGINEERING

FRANCIS B. CROCKER, E.M., Ph.D.....	<i>Professor</i>
GEORGE FRANCIS SEVER.....	<i>Instructor</i>

## General Statement

Of the courses offered by this department, courses II, III, VIII, XI and XII are required of fourth-year students, candidates for the degree of Electrical Engineer; courses I, IV, VI, IX, and X, of third-year students, candidates for the degree of Electrical Engineer; course V of third-year students, candidates for the degrees of Mining Engineer, Civil Engineer, and Metallurgical Engineer; and course VII of second-year students, candidates for the degree of Electrical Engineer. Courses XIII to XX inclusive are elective for candidates for the A.M. and Ph.D. degrees.

The theoretical side of electrical engineering is treated by lectures delivered by Professor PUPIN and Mr. FREEDMAN in the department of Mechanics, under which head the various courses will be found.

See Mechanics VI, VII, VIII, IX and IXA.

## Courses

I—DYNAMO PRACTICE—Principles, construction, operation, and design of dynamos and electric motors. (Dynamo Electric Machinery, Thompson; The Dynamo, Hawkins and Wallis.) 3 hours, first term. Professor CROCKER and Mr. SEVER

II—ELECTRIC POWER—Transmission and distribution of electric power. (Electric Transmission of Energy, Kapp,) 3 hours, first term. Professor CROCKER

III—ELECTRICAL ENGINEERING—Electro-metallurgy and electro-chemistry, including production of metals and chemicals, theory and practice of primary and secondary batteries. Advanced telegraphy and telephony; including submarine, autographic, printing and multiplex telegraphy, and special signalling systems; special and peculiar applications of electricity. 1 hour, first term; 3 hours, second term. Professor CROCKER

IV—ELECTRIC LIGHTING—The design, installation, and operation of electric lighting systems and plants, including a discussion of each of the various elements and methods employed. 3 hours, second term. Professor CROCKER

V—ELECTRICAL ENGINEERING—The principles of electrical engineering and their application to general engineering. 1 hour lecture and 2 hours experimental demonstration, second term. Professor CROCKER

VI—ELECTRICAL ENGINEERING—Telegraphy and Telephony. (Pope's Modern Practice of the Electric Telegraph; Poole's Practical Telephone Handbook) 1 hour. Professor CROCKER and Mr. FREEDMAN

VII—ELEMENTS OF ELECTRICAL ENGINEERING—General electrical principles, laws, measurement and the introduction to their applications. (Elementary Lessons in Electricity and Magnetism, Thompson.) 3 hours, second term. Professor CROCKER and Mr. FREEDMAN

VIII—ELECTRIC RAILWAY—Special instruction in design, installation, and operation of the various systems of electric railways. 2 hours, second term.  
Mr. SEVER

X—ELECTRICAL ENGINEERING LABORATORY

1. Direct current dynamos and motors. Tests of resistances, insulation, potential, current, heating, and examination of mechanical construction.
  2. Determination by means of transmission and absorption dynamometers, such as the Webb floating and Webber types and Prony brakes, of the losses in dynamos and motors at various loads. Electrical methods of determining the efficiency of dynamos and motors at different outputs.
  3. Determination and plotting of the various characteristic curves of dynamo electric machinery. Location and remedy of faults in electrical machinery.
  4. Operation of the steam engine and the use of the steam engine and the indicator in ascertaining the various losses in the complete system.
  5. Plotting of load diagrams from the university lighting plant. Study of special machines such as arc motors and arc dynamos. Operation of arc lamps.
- 8 hours. MR. SEVER

XI—ELECTRICAL ENGINEERING LABORATORY

Alternating current dynamos, motors, and transformers.

1. Tests of resistances, self-induction, reactance, insulation, potential, current; and heating of different apparatus.
2. Measurement of the various losses in alternating current apparatus such as dynamos, transformers, and motors, this giving data for the determination of their efficiencies.
3. Determination of the characteristic curves of alternating current dynamos. Plotting of alternating current curves from dynamos, motors, and transformers by various methods, these involving the use of the telephone, dynamometers and condensers.

5 hours. MR. SEVER

XII.—ELECTRICAL ENGINEERING LABORATORY

Advanced electrical measurements and testing.

The experiments included under this heading are as follows: Calibration of measuring instruments such as ammeters, voltmeters, dynamometers, wattmeters using ampere balances and standardized resistances for the standards. The use of the ballistic galvanometer, the determination of the magnetic leakage and useful magnetic flux in dynamo and motors; hysteresis and permeability measurements on different qualities of iron and steel by the bar and yoke method. The use of the secohmmeter in various determinations involving self-induction and capacity.

5 hours. MR. FREEDMAN and MR. SEVER

XIII—HISTORY OF THE DEVELOPMENT OF THE APPLICATIONS OF ELECTRICITY. Professor CROCKER

XIV—THEORY OF ELECTROLYSIS AND OF PRIMARY AND SECONDARY BATTERIES. Professor CROCKER

XV—DIRECT CONVERSION OF THE ENERGY OF FUEL INTO ELECTRICITY. Professor CROCKER

XVI—SPECIAL FORMS OF DYNAMO AND MOTOR—High frequency, high potential and unipolar. Professor CROCKER

XVII—LONG-DISTANCE TRANSMISSION OF ELECTRIC POWER. Professor CROCKER

XVIII—THEORY OF THE TELEPHONE. Professor CROCKER

XIX—MULTIPLEX AND AUTOGRAPHIC TELEGRAPHY. Professor CROCKER

XX—SPECIAL APPLICATIONS OF ELECTRICITY TO MINING, MECHANICAL, CIVIL, AND METALLURGICAL ENGINEERING. Professor CROCKER

### Equipment

The department of Electrical Engineering occupies five rooms ; one used for lecture purposes, two for laboratories, and two for special investigations and experimental work by the officers of the department.

The apparatus of the department naturally divides itself into three classes :

*a.* Machinery.

*b.* Practical apparatus and measuring instruments.

*c.* Instruments of precision.

The machinery includes a steam-engine and complete electric-lighting plants of the three principal types, *i. e.*, arc, incandescent (direct current), and alternating current, each of practical size. These are in addition to the regular electric-lighting plant of the University, which has 1000-light capacity and is available for experiment and continuous supply of current. There are also a number of dynamos, motors, and dynamotors of various sizes and types, a lathe, electric-drill press, and tools of all kinds. A number of railway motors, dynamos, dynamometers, and Prony brakes have been added during the past year.

The practical apparatus consists of examples of apparatus used in telegraph and telephone work, and various primary and secondary batteries.

The practical measuring instruments furnish examples of almost every form of voltmeters, ammeters, wattmeters, and the like, many being duplicated.

The instruments of precision comprise a fine collection of standard resistances, condensers and cells, also standards of self-induction, standard ampere balances, and a standard Anthony bridge, together with numerous galvanometers, rheostats, electrometers, electro-dynamometers, and the like.

The department is also rapidly acquiring a very instructive museum, in which can be found illustrations of the various electrical devices and materials used in practice.

### MECHANICAL ENGINEERING

FREDERIC R. HUTTON, C.E., Ph.D .....	<i>Professor</i>
RALPH E. MAYER, C.E.....	<i>Instructor</i>
IRA H. WOOLSON, E.M.....	<i>Instructor</i>
LUTHER E. GREGORY, C.E.....	<i>Assistant</i>
THOMAS H. HARRINGTON, C.E.....	<i>Assistant</i>

### General Statement

Special students are admitted to the courses for which previous training may have fitted them. All courses intended for undergraduates in the School of



Mines may be pursued by graduates of that or other schools of like grade and standing as graduates' courses, the instruction for such persons being carried further in specialization than the time available permits to candidates for undergraduate degrees. The instruction for such advanced students will be by prescribed reading, by problems assigned, and by work in the mechanical laboratories under individual instruction. These supplementary courses will vary in difficulty with the amount of time necessary according to the needs of the individual and the subject. Experimental investigation is a special feature of such work in courses V to XIII, XVI, and XXII. The first additional courses to be provided for university students solely will be: XX, XXI, and XXII.

### Courses

**\* I—ELEMENTARY MECHANICAL DRAWING**—First term, use of instruments, elementary projections; second term, descriptive geometry, graphics, and stereotomy. 3 hours lectures, 10 hours drawing academy. Mr. MAYER and Mr. HARRINGTON

Required of first-year students in all courses in the School of Mines except Architecture. Elective for seniors in the School of Arts.

**\* II—SPECIALIZED ENGINEERING DRAWING**—Topographical and geological, charts and map; working and isometric drawing of machinery, furnaces, and structural work. Tracing and blue printing, and shop drawings. 3 hours lectures, 10 hours drawing academy. Mr. MAYER and Mr. HARRINGTON

The work appropriate to their course is required of second-year students in all the Engineering courses.

**III—MECHANICAL ENGINEERING AND MACHINE DESIGN**—Proportion of parts of machinery, special graphical statics, shop and working drawings for execution. 10 hours, alternate weeks in drawing room. Mr. WOOLSON and Mr. GREGORY

Required of third-year students in the Electrical Engineering course.

**IV—ADVANCED THESIS DRAWING**—From designs for assigned problem in engineering. Professor HUTTON and Mr. WOOLSON

Required of fourth-year students in the Electrical Engineering course.

**V—PROPERTIES OF MATERIALS**—(A) General properties of all materials used in engineering, castings, and ingot metals. 2 hours lectures, first term. Professor HUTTON

Required of third-year students in all the Engineering courses. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

**VI—PROPERTIES OF MATERIALS**—(B) Wrought iron and steel, fabrication and shop processes. Inspection of product, and tests of materials; structural alloys. 2 hours lectures, second term; laboratory work with testing machines. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

Required of third-year students in all the Engineering courses. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

**VII—HEAT AND ITS APPLICATIONS**—(A) Fuels for motive power, transfer of heat, generation of steam, chimneys, artificial draft, use of steam in engines.

\* Courses I and II are conducted as courses in Mechanical Engineering by special assignment until further notice.

2 hours lectures, first term; laboratory practice. Professor HUTTON and Mr. GREGORY

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

VIII—HEAT AND ITS APPLICATIONS—(B) Gas and air engines, combined vapor engines, ammonia and other vapor engines, air compressors, refrigerating machinery. 2 hours lectures, second term. Professor HUTTON

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

IX—DESIGN AND MANAGEMENT OF BOILERS—Construction, typical forms, setting, running, tests, and inspection. 2 hours lectures, first term. Professor HUTTON

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

X—DESIGN AND MANAGEMENT OF ENGINES—Construction, valve-gear, mechanism, handling, erection, and repair. 4 lectures, second term. Professor HUTTON

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

XI—MOTORS OTHER THAN STEAM—Animal, water, wind, and wave motors; turbines. 1 hour lecture, first term. Professor HUTTON

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

XII—DYNAMICS—Work of motors, friction, efficiency, dynamometers, governors, and regulators. 1 hour lecture, second term. Professor HUTTON

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

XIII—MACHINERY AND MECHANISM—Motion, velocity, transmissive principles, conversion of motion, teeth of wheels, general mechanism. 2 hours lectures. Mr. WOOLSON

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

XIV—PUMPS AND PUMPING ENGINES—Construction, design, mechanisms, types, valves, efficiency, duty, erection, and management. Special course of six lectures, first term. Professor HUTTON

Required of students in Civil Engineering.

XV—THE LOCOMOTIVE ENGINE—The types of engine, their running gear, the boiler, the mechanism, the design and performance in hauling loads, the compound locomotive; accessory features to the motive power. 3 hours lectures, 10 weeks of first term. Mr. WOOLSON

Required of students in Civil Engineering.



XVI—TESTING EFFICIENCY OF MOTORS—By dynamometer, by indicator, by measurement of rejected heat; calorimetry, engine-testing, boiler-testing. Special lectures and laboratory practice. Professor HUTTON and Mr. GREGORY

Open as an elective to students in Electrical and Civil Engineering, to candidates for the degree of A.M. whose minor subject is Mechanical Engineering and for the degree of Ph.D. whose major subject is Mechanical Engineering.

XVII—TESTING OF MATERIALS OF ENGINEERING—Determinations of tensile, compressive, transverse, and torsional resistances; constants of formulæ; abrasive and frictional qualities of alloys. Special lectures and laboratory work. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

Required of students in all the Engineering courses. Open to candidates for the degrees of A.M. and Ph.D. whose major subject is Mechanical Engineering.

XVIII—ENGINEERING OF POWER PLANTS—Steam engines and their mechanism, rotary engines, valve-gear, and construction. 1 hour lecture, second term. Professor HUTTON

XIX—VACATION CLASS IN MECHANICAL ENGINEERING—During the latter half of the school year visits are made to shops, factories, iron and steel works, and pumping stations, for the study of practice in these lines. The time occupied during the third year is variable according to circumstances. The instruction is conducted by Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

Open as an elective to all third-year students of Engineering.

XX—SHOP AND FACTORY ORGANIZATION AND MANAGEMENT—Cost, accounts, administration. (To be organized.)

XXI—HYDRAULIC ENGINEERING. (To be organized.)

XXII—MARINE ENGINEERING. (To be organized.)

### Equipment

The department of Mechanical Engineering occupies the fourth floor of the two wings of the School of Mines building, and has laboratories near the ground in two other buildings.

For the courses in Drawing use is made of a very complete set of Olivier models, where warped surface elements are represented by tense threads; of intersections of surfaces and the standard forms in stereotomy. For advanced work in machine design, actual models and full-sized specimens of machinery details in section, pumps, and injectors, are accessible to the students.

For the Properties of Materials courses a most valuable collection of new and old material, which has failed under strain, is continually receiving additions.

The Testing Laboratory is equipped with three standard machines for determining tensile, compressive, and transverse strength of material, a Fairbanks, Riehle, and Emery of 50,000, 100,000, and 150,000 pounds capacity, respectively. The latter machine is of the same type as the machine used in the Government Testing Works at Watertown, Mass., and is most remarkable for its sensitiveness and accuracy. It is particularly adapted for careful scientific investigation. The other machines are suited for rapid commercial work where extreme accuracy is not necessary. Keep's testing apparatus for cast

iron under load and shock are available, and a Thurston lubricant testing machine can be used. Provisions are made for measuring the deformation of the various specimens by micrometers and extensimeters while in process of testing. New facilities for making all kinds of tests are continually being added.

For the courses in Heat and Steam the collections embrace representative types of much of the apparatus used by the engineer in his research and his daily practice. A battery of steam boiler injectors is mounted over a tank for experiment; standard and test gauges, and a mercury column are available for calibration of instruments, steam-engine indicators and apparatus for standardizing; anemometers to measure air currents and apparatus for calibration, calorimeters for measuring the moisture in steam, and pyrometers and thermometers for its temperature. The laboratories operate five small engines and two pumps, and the department controls, for purposes of test and experiment, nine other large and small engines, operating university machinery outside of the laboratories. A De Laval steam turbine of ten horse-power has been added for experiment with this new type of motor as thesis work. To measure power of motors are several Prony brakes and an Alden absorption dynamometer, and for measurement of transmitted power a Webber, a Van Winkle, and an Emerson dynamometer, so mounted that they can be mutually compared, and recording traction apparatus for measuring the direct effort of hauling cars. A Sturtevant fan blower furnishes a controllable resistance, and an opportunity for investigating such apparatus. The shop of the department has a lathe and a planer, and an equipment of bench-tools. A Wheeler surface condenser with necessary tanks, thermometers, and weighing scales enables the consumption of steam to be measured concurrently with the power developed.

The courses in Dynamics, Motors, and Mechanism are illustrated by models of transmission and convergence of motion, and of the different types of water wheels, turbines, and other motors.

A working specimen of the Westinghouse air brake is at the service of students in Railway Engineering, with air pump and all valves complete, and a working model of a locomotive engine to a full one-quarter scale is mounted on rails, and can be run by steam or compressed air.

For the other and all courses a most abundant and complete library collection of drawings, photographs, blue-prints, and lantern slides enables instruction to be made most clear and pointed.

Great use is made in instruction of electrotypes from standard designs, prints from which are distributed in the class-room.

## English

### ENGLISH LANGUAGE AND LITERATURE

THOMAS RANDOLPH PRICE, M.A., LL.D. .... *Professor*  
A. V. WILLIAMS JACKSON, A.M., L.H.D., Ph.D. .... *Professor*

#### Courses

I—SHAKSPERE: LANGUAGE, VERSIFICATION, AND METHOD OF DRAMATIC POETRY—2 hours. Professor PRICE

Open as an elective to seniors, and, with consent of professor, to juniors.

II—CHAUCER: LANGUAGE, VERSIFICATION, AND METHOD OF NARRATIVE POETRY—2 hours. Professor PRICE

Open as an elective to seniors and university students.

III—POPE: LANGUAGE, VERSIFICATION, AND POETICAL METHOD—2 hours. Professor PRICE

Open as an elective to seniors, and, with consent of professor, to juniors.

IV—ANGLO-SAXON PROSE AND HISTORICAL ENGLISH SYNTAX—2 hours. Professor PRICE

Open as an elective to university students, and, with consent of professor, to seniors.

V—ENGLISH LANGUAGE AND LITERATURE OF THE ELEVENTH, TWELFTH, AND THIRTEENTH CENTURIES—2 hours. Professor PRICE

Open as an elective to university students, and, with consent of professor, to seniors.

VI—ANGLO-SAXON LANGUAGE AND HISTORICAL ENGLISH GRAMMAR—2 hours. Professor JACKSON

Open as an elective to juniors and seniors.

VII—ANGLO-SAXON POETRY—2 hours, first term. Professor JACKSON

Open as an elective to university students and seniors.

VIII—ENGLISH LANGUAGE AND LITERATURE OF THE FIFTEENTH CENTURY—2 hours, second term. Professor JACKSON

Open as an elective to university students and seniors.

IX—ENGLISH DRAMA, EXCLUSIVE OF SHAKSPERE, TO THE CLOSING OF THE THEATRES—2 hours. Professors JACKSON and WOODBERRY. (See Literature V).

Open as an elective to seniors and juniors.

## LITERATURE

GEORGE EDWARD WOODBERRY, A.B., .....*Professor*  
BRANDER MATTHEWS, A.M., LL.B., .....*Professor*

### General Statement

Of the courses offered by the department, A is prescribed for sophomores in the School of Arts, I to III and V to X are open to all university students: IV only to students who have already taken I.

### Courses

A—NINETEENTH CENTURY ENGLISH LITERATURE—2 hours. Professor WOODBERRY

I—THE THEORY, HISTORY, AND PRACTICE OF CRITICISM—With special attention to Aristotle, Boileau, Lessing, and the English and later French critics, and a study of the great works of imagination. Lectures and discussions. 3 hours. Professor WOODBERRY

II—THE EPOCHS OF THE DRAMA—Greek, Latin, Spanish, English, French, German. 2 hours. Professor BRANDER MATTHEWS

(Given in 1895-6, and each alternate year thereafter.)

III—THE HISTORY OF MODERN FICTION—2 hours. Professor BRANDER MATTHEWS

(Given in 1896-7, and each alternate year thereafter.)

IV—THE PRACTICE OF CRITICISM—A review of the greater works of literature, with specific original inquiries in particular epochs. Conferences and dissertations. 3 hours. Professor WOODBERRY

V—MOLIÈRE AND HIS INFLUENCE ON ENGLISH COMEDY—1 hour. Professor BRANDER MATTHEWS

VIII—EIGHTEENTH CENTURY ENGLISH LITERATURE—2 hours. Professor WOODBERRY

IX—AMERICAN LITERATURE—2 hours. Professor BRANDER MATTHEWS  
(Given in 1895-6, and each alternate year thereafter.)

X—THE ART OF ENGLISH VERSIFICATION—1 hour. Professor BRANDER MATTHEWS

XI—FRENCH DRAMATISTS OF THE 19TH CENTURY—2 hours. Professor BRANDER MATTHEWS.

(Identical with French VII. To be given in 1896-97.)

## RHETORIC AND ENGLISH COMPOSITION

GEORGE RICE CARPENTER, A.B.....	<i>Professor</i>
WILLIAM TENNEY BREWSTER, A.M.....	<i>Tutor</i>
GEORGE C. D. ODELL, Ph.D.....	<i>Assistant</i>
RALPH CURTIS RINGWALT, A.B.....	<i>Assistant</i>

### Courses

A—RHETORIC AND ENGLISH COMPOSITION—Carpenter's "Exercises in Rhetoric and English Composition." Recitations, weekly themes; in the second term lectures on certain English and American authors as models of style. 3 hours. Professor CARPENTER, Mr. BREWSTER, and Dr. ODELL

Prescribed for freshmen in the School of Arts.

B—PRACTICE IN VARIOUS KINDS OF ENGLISH COMPOSITION—Fletcher's "Introduction to Theme Writing." Fortnightly essays, lectures, and consultations. 1 hour. Professor CARPENTER and Mr. BREWSTER

Prescribed for sophomores in the School of Arts. Pre-requisite: Course A.

C—FOUR ESSAYS—Voluntary lectures, consultations. Mr. RINGWALT

Prescribed for juniors in the School of Arts. Pre-requisite: Course B.

I—ENGLISH COMPOSITION—Daily themes and fortnightly essays, lectures, and consultations. 2 hours, first term. Professor CARPENTER

Open as an elective to juniors and seniors in the School of Arts. Pre-requisite: Course B.

II—ENGLISH COMPOSITION (Advanced Course)—Lectures and discussions in regard to style: essays and other written work. 2 hours, second term. Professor CARPENTER

Open as an elective to juniors and seniors in the School of Arts.

III—HISTORY OF RHETORIC—Methods of teaching rhetoric and English composition. 2 hours. Professor CARPENTER

Especially intended for teachers and university students, but open as an elective to properly qualified seniors in the School of Arts.

(Not given in 1895-6.)

## IV—ELOCUTION—Lectures and exercises. Mr. RINGWALT

Open during the first term to juniors in the School of Arts, and during the second term to sophomores. May be taken only as an optional course, and cannot be counted for a degree.

See also Literature X: The Art of English Versification. Professor BRANDER MATTHEWS

## French

(See page 124)

## Genito-Urinary and Venereal Diseases

ROBERT W. TAYLOR, M.D.....	<i>Clinical Professor</i>
JAMES R. HAYDEN, M.D.....	<i>Chief of Clinic</i>
ROBERT H. GREENE, M.D.....	<i>Clinical Assistant</i>
WILLIAM C. GILLEY, M.D.....	<i>Clinical Assistant</i>
EDMOND Y. HILL, M.D.....	<i>Clinical Assistant</i>
JOHN VAN DER POEL, M.D.....	<i>Clinical Assistant</i>
JOHN B. STEIN, M.D.....	<i>Clinical Assistant</i>
E. L. WILLIAMSON, M.D.....	<i>Clinical Assistant</i>
J. C. P. VAN LOAN, M.D.....	<i>Clinical Assistant</i>
W. B. BROUNER, M.D.....	<i>Clinical Assistant</i>
J. E. SHRADY, M.D.....	<i>Clinical Assistant</i>

## Courses

I—VENEREAL AND GENITO-URINARY DISEASES—Clinical lectures at the Vanderbilt Clinic. 1 hour. Professor TAYLOR

Required, in the third year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE DIAGNOSIS AND TREATMENT OF VENEREAL AND GENITO-URINARY DISEASES—6 lessons for each student. Dr. HAYDEN

Optional, in the third year, for candidates for the degree of M.D.

III—HOSPITAL CLINICS IN VENEREAL AND GENITO-URINARY DISEASES—Bellevue Hospital, Tu. at 2 P.M. throughout the academic year. Professor TAYLOR. City Hospital, Blackwell's Island (formerly Charity Hospital), W. at 2 P.M., December and January. Dr. HAYDEN

The Hospital Clinics are optional, in the third year, for candidates for the degree of M.D.

## Geology

JAMES FURMAN KEMP, A.B., E.M.....	<i>Professor</i>
CHARLES ARTHUR HOLLICK, Ph.B.....	<i>Tutor</i>
GILBERT VAN INGEN.....	<i>Curator of the Geological Collections</i>

## Courses

I—GENERAL GEOLOGY—First term, physical geology, with practical work in the rock collections under the lithological part of the subject; second term,



stratigraphical and historical geology, involving laboratory work with type fossils and collections illustrating the geology of the United States. Text-book: Le Conte's Elements of Geology. 2 hours lectures, including laboratory work. Mr. HOLLICK

Elective for juniors and seniors in the School of Arts.

II—GENERAL GEOLOGY—A more elaborate discussion of the subjects treated in Course I. Text-book: Dana's Manual of Geology. 3 hours lectures. Professor KEMP

Required of all third-year students of the School of Mines in the courses of Mining, Metallurgy, Civil Engineering, Chemistry, and Geology. Elective to seniors in the School of Arts who have not had course I.

III—ECONOMIC GEOLOGY—First term, discussion of the general features and formation of ore bodies, followed by a description of the deposits of the ores of iron, copper, lead, zinc, silver, gold, and the lesser metals, with especial reference to North America; second term, a description of the distribution and occurrence of coal, petroleum, natural gas, asphalt, building stone, water supply, salines, and minor minerals. Text-book: Kemp's Ore Deposits of the United States, and lecture notes privately printed. 3 hours lectures and conferences. Professor KEMP

Required of all fourth-year students of the School of Mines in the courses of Mining, Metallurgy, Chemistry, and Geology. That portion of the course relating to Building Stones is required of fourth-year students in the course in Architecture. Elective for seniors in the School of Arts who have had Course I or II or an equivalent. Open with two additional hours weekly of collateral reading to candidates for the degrees of A.M. and Ph.D. whose minor subject is Geology.

IV—GENERAL GEOLOGY—Preceded by short course in mineralogy under the department of Mineralogy. 2 hours lectures, first term. Mr. HOLLICK

Required of third-year students in the course in Architecture.

V—PETROGRAPHY—A short course in the microscopic study of rocks. Follows Mineralogy VI. 2 lectures and one afternoon two months of the second term. Professor KEMP

Required of second-year students in the School of Mines, in the courses in Mining, Metallurgy, and Geology.

VI—PETROGRAPHY—A discussion of the microscopic structure and mineralogical composition of the crystalline rocks, and of metamorphism. Pre-requisite: Optical Mineralogy. 2 hours lectures, 4 hours laboratory. Professor KEMP

Required of fourth-year students in the course in Geology. Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology.

VII—INVERTEBRATE PALÆONTOLOGY—A general description of invertebrate fossils, following the biological sequence. Pre-requisite: course I, department of Biology. Text-books: Zittel's Handbuch der Palæontologie, vol. i, and Nicholson's Manual of Palæontology. 2 hours lectures, 4 hours laboratory. Mr. VAN INGEN

Required of fourth-year students in the course in Geology. Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology.

VIII—PALÆOBOTANY—Study of fossil plants, following the biological sequence. Pre-requisite: Course I, department of Botany. Text-Book: Zittel's Handbuch der Palæontologie, vol. ii, and Solms-Laubach's Palæo-

phytology. 1 hour lecture or conference, 4 hours laboratory or reading for two years. Mr. HOLLICK

Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology.

IX—As a thesis subject which will furnish a major course for the concluding year of study for the degree of Ph.D. some such subject as the following will be assigned.

(a) Petrography of the Serpentine in the Vicinity of New York ; (b) Geology of some restricted area, in Eastern North America ; (c) Investigation of some Series of Ore Deposits ; (d) Study of the Flora or Fauna of Certain Geological Horizons with Field Work. The work will be done under the direction of that officer of the department who has given the subject special attention.

### Summer School

X—The Trustees of the University have made an appropriation for a summer school in geology, which defrays the expenses of a small squad of advanced students for about one month each summer, with the Professor of Geology. During the College year, excursions are offered to points of geological interest near New York, on all Saturdays and holidays of the fall and spring. Few other localities afford so extensive and so accessible exposures as the vicinity of New York.

### Equipment

The department of Geology has its museum and lecture room on the top floor of the Fourth Avenue building. The museum affords exceedingly complete illustrative series of specimens in stratigraphical and economic geology and in palæontology. It is open from eight to six to students and visitors. The collections of fossil fish and fossil plants are especially rich.

The laboratories and offices comprise the parlor and basement floor of the dwelling house No 52 East 49th Street, opposite the University. The equipment includes very complete collections of rocks and thin sections, some thousands in all, for work in microscopic petrography, eight petrographical microscopes, micro-spectroscope, micro-camera, cameras for out-door photography and grinder for making thin sections. The department has also placed with it the geological library of the late Professor Newberry, containing many rare volumes and pamphlets.

The University has an arrangement with the American Museum of Natural History which secures for advanced students especial privileges in its collections. As these contain the valuable and unique collection of Palæozoic fossils made by James Hall, the privilege is of especial consequence to students of palæontology.

### Germanic Languages and Literatures

\* HJALMAR HJORTH BOYESEN, Ph.D.....*Professor*  
WILLIAM HENRY CARPENTER, Ph.D.....*Professor of Germanic Philology*  
EUGENE HOWARD BABBITT, A.B.....*Instructor*  
HERMAN J. SCHMITZ, A.M.....*Lecturer*

\* Deceased, Oct. 4, 1895



### General Statement

The department, as its name implies, offers instruction, not only in German, but in the kindred languages and literatures of the other members of the Germanic group. In German the aim of the instruction is primarily to enable students to use the modern language with facility in reading, writing, and, as far as possible, in speaking, and to acquaint them with the masterpieces of German literature. Opportunity is also given to acquire a reading knowledge of the languages of the other Germanic nations, and to study their literatures. Parallel courses are arranged in such a way that while both language and literature are combined in the earlier courses, either side may be subsequently emphasized at will. Courses are also given in the philology of the whole Germanic group. Practical work supplementary to the lectures is given in the seminars.

The courses offered by the department are grouped under the following heads: German, Gothic, Scandinavian, and Germanic Philology.

Course A is required of freshmen in the School of Arts who have taken the entrance examination in German; B of sophomores who have taken A, unless they elect Chemistry as a substitute; I, III, IV, and VIII are open as electives to juniors, A, B, I, III, IV, VII, VIII, and X to all university students. Provision is made for students who desire to begin German.

### Courses in German

ELEMENTARY COURSE—Books: Schmitz, *Elements of German*; Boisen, *German Prose*; Buchheim, *Heine's Harzreise*. 3 hours. Mr. SCHMITZ

Intended for students, preferably in the Freshman or Sophomore year, who have not studied German before entering college. Members of this class will be prepared to join German A at the beginning of the second year. Cannot be counted for a degree.

A—GRAMMAR, READING, AND COMPOSITION—Books: Thomas, *Practical German Grammar*; Buchheim, *Heine's Prosa*, Wolstenholme, *Riehl's Cultur-geschichtliche Novellen*; Harris, *German Composition*. 3 hours. Mr. BABBITT

Prescribed for Freshmen who have passed the entrance examination in German.

B—GOETHE, SCHILLER, AND LESSING. General Introduction to the Study of German Literature—Books: Buchheim, *Lessing's Nathan der Weise*; Hamann, *Lessing's Laocöon*; Hart, *Schiller's Die Piccolomini*; Bernhardt, *Goethe's Meisterwerke*. 3 hours. Mr. SCHMITZ

Prescribed for Sophomores who have taken Course A in their Freshman year, unless Chemistry I is substituted in its place.

I—GOETHE'S FAUST—First and second parts, with commentary—Books: Thomas, *Goethe's Faust*; Boyesen, *Goethe and Schiller*, containing *A Commentary on Goethe's Faust*. 2 hours. Professor W. H. CARPENTER

Open to students who have taken B or its equivalent and to all university students.

II—HISTORY OF GERMAN LITERATURE—Lectures. 2 hours, Professor BOYESEN

[Not given in 1895-6.]

III—SELECTED HISTORICAL PROSE, chiefly from Freytag's *Bilder aus der deutschen Vergangenheit*—Reading at sight. 2 hours. Mr. BABBITT

Open to students who have taken B or its equivalent and to all University students.

IV—HISTORY OF THE GERMAN LANGUAGE—Lectures and text commentary—The German language to Luther (first term). From Luther to Lessing, with reading of texts (second term). 2 hours. Professor W. H. CARPENTER

Open to students who have taken B or its equivalent and to all University students.

V—MIDDLE HIGH GERMAN—Books: Wright, *Middle High German Primer*; Paul, *Mittelhochdeutsche Grammatik*; Weinhold, *Mittelhochdeutsches Lesebuch*. 2 hours. Professor W. H. CARPENTER

[Not given in 1895-6.]

VI—SEMINAR—Critical study of special periods in German literature—1 hour. Professor BOYESEN

[Not given in 1895-6.]

### Optional Courses

SIGHT READING—Books: Hauff's *Das Wirthshaus im Spessart*; Schiller's *Geschichte des Dreissigjährigen Krieges*; Becker's *Friedrich der Grosse*. 2 hours. Mr. SCHMITZ

Open to students who have passed the entrance examination in German and to all university students.

GERMAN CONVERSATION—2 hours. Mr. SCHMITZ

Open to students who have passed the entrance examination in German and to all university students.

SCIENTIFIC GERMAN—Books: Gore, *German Scientific Reader*. 2 hours. Mr. BABBITT

Open to all students who have passed the entrance examination in German, but intended primarily for students of the School of Mines.

### Course in Gothic

VII—GOTHIC—Books: Wright, *Primer of the Gothic Language*; Braune, *Gothic Grammar*; Bernhardt, *Die gotische Bibel*. 1 hour. Professor W. H. CARPENTER

### Courses in Scandinavian

VIII—ICELANDIC, ELEMENTARY COURSE—Books: Sweet, *Icelandic Primer*; Vigfusson and Powell, *Icelandic Prose Reader*; Wilken, *Die prosaische Edda*. 2 hours. Professor W. H. CARPENTER

IX—HISTORY OF SCANDINAVIAN LITERATURE—Lectures. 2 hours. Professor BOYESEN

[Not given in 1895-6.]

### Course in Germanic Philology

X—GENERAL INTRODUCTION TO GERMANIC PHILOLOGY—Lectures 2 hours. Professor W. H. CARPENTER

## Greek

HENRY DRISLER, LL.D.....	<i>Jay Professor (Emeritus)</i>
EDWARD DELAVAN PERRY, Ph.D.....	<i>Jay Professor</i>
JAMES RIGNALL WHEELER, Ph.D.....	<i>Professor</i>
CLARENCE HOFFMAN YOUNG, A.M., Ph.D.....	<i>Instructor</i>
HENRY JAGOE BURCHELL, JR.....	<i>Lecturer</i>

### General Statement

Courses A, B, I, II, III, IV, V, VI, VII and VIII are open to all university students; courses IX, X, XI, and XII are open to advanced students only. Course A is prescribed for Freshmen in the School of Arts; course B for sophomores, unless Chemistry be substituted for it; courses I and II are elective for Juniors.

Courses A, B, I and II may not be counted for the degrees of Master of Arts and Doctor of Philosophy.

All the courses in this department except A, B, I, II and XI, are open to women on the same terms as to men. Women wishing to enter any of the courses, as candidates for a degree or as special students, must register through Barnard College.

### Courses

A—HOMER (Perrin's *Odyssey*, Books I-IV), Greek Prose Composition—3 hours, first term; LYSIAS (Bristol's or White's) OR ANDOCIDES (Marchant's), Greek Prose Composition—3 hours, second term. (See the scheme of attendance of the School of Arts.) Dr. YOUNG

B—EURIPIDES' IPHIGENIA IN TAURIS (Flagg's, Jerram's) AND ALCESTIS (Earle's). 3 hours, first term. Professor PERRY

PLATO'S PROTAGORAS (Towle's) AND CRITO (Adam's)—3 hours, second term. Greek Prose Composition (optional), second term. Dr. YOUNG

I—SOPHOCLES' CEDIPUS TYRANNUS AND ANTIGONE—3 hours, first term. Dr. YOUNG

DEMOSTHENES' ORATION ON THE CROWN—3 hours, second term. Greek Prose Composition (optional), second term. Professor PERRY

II—ÆSCHYLUS' PROMETHEUS AND PERSÆ; THUCYDIDES, BOOK VII; PLUTARCH'S LIFE OF NICIAS—2 hours. Professor WHEELER

III—LECTURES ON GREEK LITERATURE; PART I, POETRY—2 hours. Professor WHEELER

IV—THE LYRIC AND BUCOLIC POETS—3 hours. Professor PERRY

V—PLATO'S PHÆDO; ARISTOTLE'S POETICS; EURIPIDES, FOUR PLAYS—3 hours. Professor WHEELER

VI—NEW TESTAMENT: GOSPELS AND ACTS—2 hours, first term. Dr. YOUNG

VII—NEW TESTAMENT: EPISTLES—2 hours, second term. Dr. YOUNG

VIII—LECTURES ON THE MANNERS AND CUSTOMS OF THE ANCIENT GREEKS: supplemented by readings in the first book of Pausanias. 2 hours. Dr. YOUNG

IX—GREEK GRAMMAR: PHONOLOGY AND MORPHOLOGY—2 hours. Professor PERRY

X—INTRODUCTION TO GREEK EPIGRAPHY—2 hours. Professor WHEELER

XI—RAPID READING OF ARISTOPHANES. 1½ hours. Professors PERRY and WHEELER

XII—GREEK SEMINAR—Discussion of selected topics in Greek literature or Greek grammar. Once weekly. Professors PERRY and WHEELER

### Equipment

The department is well equipped with maps, plans, and models. It possesses a large collection (to which important additions have recently been made) of photographs and photographic reproductions of Greek monuments, localities, and sculpture, books of illustrations, lantern slides, and a few casts and electro-types, for the illustration of ancient monuments, art and daily life, and these are continually drawn upon whenever opportunity offers in reading or lectures, that the literature and the art may each complement the other. The Avery Collection of the library offers an unusual opportunity for further study of these subjects, with its richly illustrated works on art and archæology, as well as architecture, and forms an invaluable subsidiary to the department. This is again reinforced by the facilities offered through the arrangement between the University and the Metropolitan Museum of Art, by which students of this University are granted free access to all the museum collections for study and comparison. The department also possesses in its study a special library of selected books, which are placed at the disposal of university students; and the general library contains all the important serial publications, issued abroad and at home, in the field of philology and archæology. In Greek epigraphy its collection is almost complete. This is supplemented in the department by an extensive system of "squeezes" from the marbles in many parts of Greece and the British Museum, by means of which the study becomes more truly scientific than when pursued from published fac-similes exclusively.

### Courses in New Testament Greek at the Union Theological Seminary

These courses may count as part of the work required for the degrees of Master of Arts and Doctor of Philosophy at Columbia College; but it is necessary that students who intend to avail themselves of this privilege should come to an understanding with the Dean of the School of Philosophy at Columbia College with regard to equivalence of courses, at the time of registering themselves, or of renewing their registration, as candidates for a degree.

## Courses

A—EXERCISES IN NEW TESTAMENT GREEK, ON THE BASIS OF WINER'S GRAMMAR—Readings in the Gospel of Mark, with lectures; Gospel of Matthew for private reading. 2 hours, first term. Professor VINCENT

B—EXPOSITION OF THE SYNOPTIC GOSPELS. The Gospels of Matthew and Mark to be read entire in the class-room, or privately. 2 hours, first term. Professor VINCENT

C—EXPOSITION OF THE GOSPEL OF LUKE AND THE BOOK OF ACTS; THE EPISTLE OF JAMES, AND PAUL'S FIRST EPISTLE TO THE THESSALONIANS—One of the first two will be read in class, the other privately. 2 (or 3) hours, second term. Professor VINCENT

D—GENERAL INTRODUCTION TO THE PAULINE WRITINGS—History of Pauline Criticism. One of the *Hauptbriefe*: Romans, First Corinthians, or Galatians. 3 hours, first term. Professor VINCENT

E—EPISTLES OF THE IMPRISONMENT: EPHESIANS, PHILIPPIANS, PHILEMON, COLOSSIANS (at least two of the four), AND EPISTLE TO THE HEBREWS—3 hours, second term. Professor VINCENT

F—GENERAL INTRODUCTION TO THE JOHANNINE WRITINGS—2 hours, second term. Professor VINCENT

## Gynecology

GEORGE MONTGOMERY TUTTLE, M.D.....	<i>Professor</i>
GEORGE W. JARMAN, M.D.....	<i>Chief of Clinic</i>
W. L. STONE, M.D.....	<i>Clinical Assistant</i>
B. W. STIEFEL, M.D.....	<i>Clinical Assistant</i>
E. H. L. MCGINNIS, M.D.....	<i>Clinical Assistant</i>
CHAS. J. PROBEN, M.D.....	<i>Clinical Assistant</i>
JOHN M. KENNEDY, M.D.....	<i>Clinical Assistant</i>
E. P. MALLET, M.D.....	<i>Clinical Assistant</i>
W. B. BRINSMADE, M.D.....	<i>Clinical Assistant</i>

## Courses

I—THE PRINCIPLES AND PRACTICE OF GYNECOLOGY—Didactic lectures. 3 hours from March 15th to the end of the academic year. Professor TUTTLE  
Required, in the second and third years, of candidates for the degree of M.D.

II—CLINICAL INSTRUCTION AT THE VANDERBILT CLINIC—I hour. F. at 3 P.M. Professor TUTTLE  
Required, in the third year, of candidates for the degree of M.D.

III—PRACTICAL INSTRUCTION IN DIAGNOSIS, TREATMENT, AND THE USE OF INSTRUMENTS, INCLUDING ELECTRO-THERAPEUTICS—6 lessons for each student, at the Vanderbilt Clinic. Dr. JARMAN and Dr. STONE  
Optional, in the third year, for candidates for the degree of M.D.

IV—HOSPITAL CLINICS IN OPERATIVE GYNECOLOGY—Roosevelt Hospital, McLane Operating Theatre.



To these clinics the students are invited, to witness the various surgical operations of gynecology. Tu., Th., and Sat. at 2.30 P.M., throughout the academic year. Professor TUTTLE

Optional, in the third year, for candidates for the degree of M.D.

### The McLane Operating Theatre of the Roosevelt Hospital

This is upon the hospital grounds, immediately opposite the College of Physicians and Surgeons, and is one of the most thoroughly equipped buildings in this country for instruction in the surgery of gynecology.

The cases upon which operations are demonstrated are taken from the gynecological wards of the Roosevelt Hospital, which are under the exclusive direction of the Professor of Gynecology, and the cases in which are all available for the instruction given by him.

## History and Political Philosophy

JOHN WILLIAM BURGESS, Ph.D., LL.D.....	<i>Professor</i>
MUNROE SMITH, A.M., J.U.D.....	<i>Professor</i>
HERBERT LEVI OSGOOD, Ph.D.....	<i>Adjunct Professor</i>
WILLIAM ARCHIBALD DUNNING, Ph.D.....	<i>Adjunct Professor</i>
JAMES HARVEY ROBINSON, Ph.D.....	<i>Professor</i>
FREDERIC BANCROFT, Ph.D.....	<i>Lecturer</i>
GEORGE LOUIS BEER, A.M.....	<i>Prize Lecturer</i>
HARRY ALONZO CUSHING, A.M.....	<i>Lecturer</i>

### General Statement

The two groups of courses in this department, history and political philosophy, are intended partly for undergraduates and partly for those seeking the higher degrees. Course A is required for sophomores in the School of Arts, and course B for juniors. Course V is elective for juniors only. For university students who desire a general view of history, either as an element in liberal culture or as preliminary to special work in law or political science, the courses particularly recommended are VII (*a*) and (*b*), VIII, XVI, and XXVI. These courses are open to seniors in the School of Arts and to other candidates for the degree of A.B. Courses XVII and XXX are open only to advanced students who are qualified to do special detailed work in the respective subjects. Attention is particularly called to the following courses, which, while given in other departments, deal with subjects which constitute an integral part of the domain of history; history of European law; general history of diplomacy; history of American diplomacy; and the historical courses in the department of Economics and Social Science.

### Courses in History

A (I)—MEDIÆVAL AND MODERN HISTORY—Recitations on Myer's Outlines, with supplementary lectures. 2 hours. Mr. CUSHING

B (II)—EUROPEAN HISTORY SINCE 1815—Recitations on Fyffe's History of Modern Europe; reading and reports. 2 hours, first term. Professor DUNNING and Mr. CUSHING



V—AMERICAN HISTORY—Recitations, reading, and reports. 3 hours. Professor DUNNING

VII (a)—MIDDLE AGES AND THE RENAISSANCE—Lectures and private reading. 2 hours, first term. Professor ROBINSON

Given in 1895-96, and alternate years thereafter.

VII (b)—THE SIXTEENTH CENTURY TO THE PEACE OF AUGSBURG—Lectures and private reading. 2 hours, second term. Professor ROBINSON

Given in 1895-96, and alternate years thereafter.

VII (c)—POLITICAL HISTORY OF EUROPE, FROM THE PEACE OF AUGSBURG TO THE PEACE OF WESTPHALIA (1555-1648)—Lectures and outside reading. 2 hours, first term. Professor ROBINSON

Given in 1896-97, and alternate years thereafter.

VII (d)—THE PERIOD OF LOUIS XIV, AND THE ANTECEDENTS OF THE FRENCH REVOLUTION—Lectures and required reading of De Tocqueville's *Ancien Régime* and Sorel's *Europe et la Révolution*, Vol. I. 2 hours, second term. Professor ROBINSON

Given in 1896-97, and alternate years thereafter.

VII (e)—EUROPE AND THE FRENCH REVOLUTION, 1789-1801—Lectures and outside reading. 2 hours, first term. Professor ROBINSON

Given in 1895-96, and alternate years thereafter.

VII (f)—EUROPE AND NAPOLEON, 1801-1815—Lectures and outside reading. 2 hours, second term. Professor ROBINSON

Given in 1895-96, and alternate years thereafter.

VII (g)—PRUSSIA UNDER THE HOHENZOLLERNS AND THE UNIFICATION OF GERMANY, 1416-1871—Lectures and outside reading. 2 hours, first term. Professor ROBINSON

Given in 1896-97, and alternate years thereafter.

VII (h)—THE SOURCES OF LATER MEDIEVAL AND MODERN CONTINENTAL HISTORY—METHODS OF HISTORICAL STUDY—Lectures, bibliographical exercises by students. Bernheim's *Lehrbuch der Historischen Methode*. 2 hours, second term. Professor ROBINSON

VIII—POLITICAL AND CONSTITUTIONAL HISTORY OF ENGLAND—Lectures and private reading. 2 hours. Professor OSGOOD

IX—DEVELOPMENT OF THE FRENCH MONARCHY—Lectures. 2 hours, second term. Mr. BEER

XII—EARLY CHURCH HISTORY, A.D. 100-311—2 hours. Given at the Union Theological Seminary.

XIII—MEDIÆVAL CHURCH HISTORY, FROM THE TIME OF CONSTANTINE TO THE REFORMATION. 2 hours. Given at the Union Theological Seminary.

XIV—MODERN CHURCH HISTORY; THE REFORMATION AND COUNTER-REFORMATION. 2 hours. Given at the Union Theological Seminary.

XV—SEMINARIUM IN EUROPEAN HISTORY—2 hours. Professor ROBINSON

XVI—POLITICAL AND CONSTITUTIONAL HISTORY OF THE UNITED STATES—Lectures and private reading. 2 hours. Professor BURGESS

XVII—POLITICAL HISTORY OF THE COLONIES AND OF THE AMERICAN REVOLUTION—Investigation course. 2 hours. Professor OSGOOD

XVIII—THE UNITED STATES DURING CIVIL WAR AND RECONSTRUCTION—Lectures and private reading. 2 hours, second term. Professor DUNNING

XX—AMERICAN CHURCH HISTORY—2 hours. Given at the Union Theological Seminary.

XXI—HISTORY OF THE UNITED STATES FROM 1850 TO 1861. Lectures. 2 hours, first term. Dr. BANCROFT

XXV—SEMINARIUM IN EARLY AMERICAN HISTORY—1 hour. Professor OSGOOD

XXV (*a*)—SEMINARIUM IN RECENT AMERICAN HISTORY—1 hour. Dr. BANCROFT

### Courses in Political Philosophy

XXVI—GENERAL HISTORY OF POLITICAL THEORIES—Lectures, with references to Janet, *Histoire de la Science Politique*; Bluntschli, *Geschichte der neueren Staatswissenschaften*; and Pollock, *History of the Science of Politics*. 2 hours. Professor DUNNING

XXVII—AMERICAN POLITICAL PHILOSOPHY—Assigned reading, essays, and discussions. 1 hour (or 2 hours each alternate week). Professor DUNNING

XXX—SEMINARIUM IN POLITICAL PHILOSOPHY—1 hour. Professor DUNNING

### Equipment

The department employs in its work the best German historical maps, and one of the four largest relief globes ever made. In the special library of political science, numbering 60,000 volumes, are to be found all the most valuable works for either general reading or special research; and this is supplemented by the rich collections of the Astor and Lenox Libraries as well as those of the Bar Association and the New York and Long Island Historical Societies, all of which are readily accessible to students of the department. Under the auspices of the Academy of Political Science, to which advanced students are eligible as members, opportunities are given for the discussion of questions of interest as presented in papers by specialists.

### Indo-Iranian Languages

(See page 108)

### Italian

(See page 127)

## Laryngology

(Including Diseases of the Larynx, Pharynx, and Nasal Passages)

GEORGE MOREWOOD LEFFERTS, M.D.....	<i>Clinical Professor</i>
D. BRYSON DELAVAN, M.D.....	<i>Chief of Clinic</i>
GEORGE A. RICHARDS, M.D.....	<i>Clinical Assistant</i>
WILLIAM K. SIMPSON, M.D.....	<i>Clinical Assistant</i>
CHRISTOPHER J. COLLES, M.D.....	<i>Clinical Assistant</i>
CHARLES W. STEWART, M.D.....	<i>Clinical Assistant</i>
JAMES P. McEVOY, M.D.....	<i>Clinical Assistant</i>
JOHN H. BILLINGS, M.D.....	<i>Clinical Assistant</i>
EDWARD W. PERKINS, M.D.....	<i>Clinical Assistant</i>
RICHARD FROTHINGHAM, M.D.....	<i>Clinical Assistant</i>
ALFONSO A. RICHARDSON, M.D.....	<i>Clinical Assistant</i>
EDMUND W. BILL, M.D.....	<i>Clinical Assistant</i>

### Courses

I—LECTURES AT THE VANDERBILT CLINIC UPON THE DISEASES OF THE THROAT AND NOSE, WITH LARYNGOSCOPIC AND RHINOSCOPIC DEMONSTRATIONS—A systematic course of didactic lectures, fully illustrated, as the subject demands, by the presentation or demonstration of patients. During the course all of the minor surgical operations upon throat and nose are performed in the presence of the class. The subject and dates of the lectures are announced in printed form at the beginning of the session. 1 hour a week for twenty-eight weeks. Tu. at 2 P.M. Professor LEFFERTS

Required, in the third year, of candidates for the degree of M.D. in the three years' course.

II—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE USE OF THE LARYNGOSCOPE AND RHINOSCOPE UPON THE "PHANTOM," AND UPON ADULT PATIENTS—The course is based upon the principle of short preliminary explanations, followed by practical work by the students, directly and personally supervised by the instructor. The necessary instruments and apparatus are furnished by the department. 6 lessons for each student in a division of twelve. Dr. DELAVAN

Optional, in the third year, for candidates for the degree of M.D. in the three years' course.

### Equipment

The department of Laryngology is equipped with a complete collection of the most approved modern instruments and appliances, by the best makers, for the diagnosis and treatment of the diseases of the throat and nose, and for the giving of instruction therein.

Among other things may be mentioned : a complete collection of the modern electric illuminating apparatus for the examination of patients ; the electric laryngoscope ; apparatus for the trans-illumination of the accessory cavities of the face ; dilators, candulæ, and other instruments, used in the treatment of laryngeal stenosis ; operative instruments by Pfau of Berlin, arranged in cases and catalogued ; laryngoscopic "phantoms," by Bock of Leipsic, for exercising

the students in the use of the various instruments preliminary to the examination of the living subject ; one hundred anatomical models of the healthy and diseased larynx by Stieger of Leipsic, and Tobold of Berlin. Models of the normal larynx by Bock of Leipsic, and by Auzoux of Paris ; physiological models to illustrate the normal movements and the various paralyses of the vocal cords ; a diagrammatic model, to illustrate the mechanical interference of laryngeal neoplasms with the act of phonation ; photographs of the living larynx, in health and disease ; four hundred wall plates in color by Wright of New York, of the pathological conditions of larynx, pharynx, naso-pharynx, and nasal passages. These are of large size (42 x 36) to illustrate the clinical lectures. A collection of large drawings, illustrating the anatomy of the accessory sinuses of the nose. Also illustrated by a series of sections of the skull, made by Ward of Rochester, and by a series of models of frozen sections of the human head, prepared by Odo Betz and by Elkins. Fränkel's photogravures of the same subjects. Drawings and instruments to illustrate the operation of intubation. Reproductions of all the earlier tubes for laryngeal catheterization and intubation. This latter collection is historically interesting as illustrating the evolution of the intubation tube. A special manikin, upon which the procedure of intubation may be practically demonstrated to a large number of students at one time. Wet preparations of the larynges of children, demonstrating *in situ* the proper sized intubation tube, and its exact position in the larynx at different ages (1-15 years) ; and a series of models by Elkins, of laryngeal diphtheria ; a collection of 50 skulls, demonstrating the various lesions of the nasal septum, and abnormalities of the nasal chambers.

The pathological and anatomical museum of the department contains at present one hundred and fifty carefully prepared and mounted wet preparations of the larynx and its diseases. This collection is specially rich in the rare specimens, such as benign neoplasms of the larynx, intrinsic and extrinsic, laryngeal cancer, and others.

### Latin

HARRY THURSTON PECK, A.M., Ph.D., L.H.D.....	<i>Professor</i>
JAMES C. EGBERT, JR., A.M., Ph.D.....	<i>Adjunct Professor</i>
NELSON G. MCCREA, Ph.D.....	<i>Instructor</i>
HENRY J. BURCHELL, JR., A.M.....	<i>Lecturer</i>

### General Statement

Course A is required of freshmen in the School of Arts, B of sophomores, unless they elect Chemistry as a substitute ; I and II are open as elective to juniors, III-VII to seniors and university students, VIII-XI to university students, IX to seniors, by special permission, and III and IV to specially qualified juniors.

### Courses

A—CICERO DE SENECTUTE—HORACE : ODES, EPODES, CARMEN SÆCULARE. Latin prose composition. Reading at sight. 3 hours. Dr. MCCREA

B—HORACE : SATIRES AND EPISTLES—Latin prose composition. SELECTED READINGS in prose and verse. Latin literature. 3 hours. Professors PECK and EGBERT

I—THE SATIRES OF JUVENAL—Lectures on the Roman satirists. 2 hours, first term. Professor EGBERT

II—EPIGRAMS OF MARTIAL—2 hours, second term. Professor EGBERT

III—LUCRETIVS DE RERUM NATURA—Lectures on the Epicurean philosophy. 2 hours. Dr. MCCREA

IV—PLAUTUS—Lectures on Roman comedy. 2 hours. Dr. MCCREA

V—INTRODUCTION TO THE STUDY OF LATIN INSCRIPTIONS—2 hours. Professor EGBERT

VI—RAPID READING OF THE WHOLE OF HORACE—2 hours. Professor PECK

VII—THE CENA TRIMALCHIONIS OF PETRONIUS—Plebeian Latin. The private life of the Romans. 2 hours. Professor PECK

VIII—LECTURES ON THE HISTORY OF CLASSICAL PHILOLOGY—2 hours. Professor PECK

IX—THE HISTORIES AND DIALOGUS OF TACITUS. 2 hours. Professor EGBERT

X—ECCLESIASTICAL LATIN—TERTULLIAN AND ST. AUGUSTINE—I hour. Professor EGBERT

XI—ADVANCED COURSE IN LATIN INSCRIPTIONS—I hour. Professor EGBERT

## Law

The courses offered in Law are here indicated. For full information as to the course leading to the degree of LL.B. consult the statement concerning the School of Law.

### MUNICIPAL OR PRIVATE LAW

WILLIAM A. KEENER, LL.D.....	<i>Professor</i>
GEORGE M. CUMMING, A.B.....	<i>Professor</i>
FRANCIS M. BURDICK, LL.D.....	<i>Professor</i>
GEORGE W. KIRCHWEY, A.B.....	<i>Professor</i>
*HENRY P. STARBUCK, A.B., LL.B.....	<i>Professor</i>
GEORGE F. CANFIELD, A.M., LL.B.....	<i>Professor</i>
JOHN ORDONAU, LL.D.....	<i>Professor of Medical Jurisprudence</i>
HERBERT NOBLE, A.M., LL.B.....	<i>Lecturer</i>
DAVID BANDLER, A.B., LL.B.....	<i>Prize Lecturer</i>

### General Statement

Courses I to VI, inclusive, constitute the work of the first year in the Law School and are open to seniors in the School of Arts. Courses VII to XV, in-

\* Absent for the current academic year on leave

clusive, are open to students who have taken the work of the first year in law. Courses XVII to XXV, inclusive, are open to students who have taken the work of the first and second years in law. Course XVI is an optional and cannot be offered for a degree.

### Courses

I—ELEMENTS OF JURISPRUDENCE AND EQUITY—2 hours. Professor KEENER

II—CONTRACTS—3 hours. Professor CUMMING

III—REAL AND PERSONAL PROPERTY—3 hours. Professor KIRCHWEY

IV—TORTS—2 hours. Professor BURDICK

V—LAW OF PERSONS AND DOMESTIC RELATIONS—2 hours, first term. Professor CUMMING

VI—COMMON LAW PLEADING AND PRACTICE—2 hours, second term. Professor CUMMING

VII—CONTRACTS AND QUASI-CONTRACTS—3 hours. Professors CUMMING and KEENER

VIII—EQUITY—2 hours. Professor KEENER

IX—REAL AND PERSONAL PROPERTY—3 hours. Professor KIRCHWEY

X—AGENCY—2 hours. Professor CANFIELD

XI—BAILMENTS AND CARRIERS—2 hours. Mr. BANDLER

XII—SALES OF PERSONAL PROPERTY—2 hours. Professor BURDICK

XIII—CODE PRACTICE—2 hours, second term. Mr. NOBLE

XIV—EQUITY PLEADING AND PRACTICE—2 hours. Mr. NOBLE

XV—NEGOTIABLE PAPER—2 hours. Professor BURDICK

XVI—MEDICAL JURISPRUDENCE—3 hours, October to January. Professor ORDANAUX

XVII—CODE PLEADING AND PRACTICE—2 hours. Mr. NOBLE

XVIII—CORPORATIONS—2 hours. Professor CUMMING

XIX—EQUITY—2 hours. Professor KEENER

XX—EVIDENCE—2 hours. Professor CANFIELD

\*XXI—INSURANCE—2 hours, second term. Mr. BANDLER

XXII—PARTNERSHIP—2 hours. Professor BURDICK

XXIII—SURETYSHIP AND MORTGAGE—2 hours. Mr. NOBLE and Mr. BANDLER

XXIV—WILLS AND ADMINISTRATION—2 hours. Professor KIRCHWEY

XXV—DOCTRINES PECULIAR TO NEW YORK LAW—1 hour. Mr. CANFIELD

\* Not offered during the current academic year



## PUBLIC LAW AND JURISPRUDENCE

JOHN WILLIAM BURGESS, Ph.D., LL.D.....	<i>Professor</i>
MUNROE SMITH, A.M., J. U. D.....	<i>Professor</i>
FRANK JOHNSON GOODNOW, A.M., LL.D.....	<i>Professor</i>
JOHN BASSETT MOORE, A.B.....	<i>Professor</i>
EDMOND KELLY, A.M.....	<i>Lecturer</i>

## General Statement

The courses in this department fall into two divisions: Public Law and Jurisprudence. The purpose of the courses in public law is to give a complete general view of international, constitutional, administrative, and criminal law. They serve primarily to supplement the courses in the department of History and Economics, and to give with them a complete system of political science. In the second place, they supplement the courses offered by the department of Private Law, constituting with these a well-rounded legal curriculum. The courses in international, constitutional, and administrative law are also recommended to journalists, students of philosophy and theology, and in general to all who desire to understand the organization and working of governmental systems. The courses in Criminal Law and in International Private Law (conflicts of private law) are more professional in their character, and are chiefly intended for law students.

The courses in Roman Law and Comparative Jurisprudence, while constituting an integral portion of a complete legal education, will be found useful to all those who desire a general comprehension of the principles of private law rather than a professional training in its details. The introductory course upon the Roman Law (XXI) and that upon European Legal History (XXIII) are especially recommended to students of history, economics, and philosophy.

## Courses in Public Law

*A—Constitutional Law*

I—COMPARATIVE CONSTITUTIONAL LAW OF THE PRINCIPAL EUROPEAN STATES AND THE UNITED STATES—Lectures, 2 hours. Professor BURGESS

V—SEMINARIUM IN THE CONSTITUTIONAL LAW OF THE UNITED STATES—Investigation and discussion. 2 hours. Professor BURGESS

The courses on the Constitutional History of Europe, England, and the United States (cf. courses in History) are regarded as a necessary introduction to the above courses on Constitutional Law.

*B—International Law*

VI—HISTORY OF DIPLOMACY—Lectures, 2 hours, first term. Professor MOORE

VII—HISTORY OF AMERICAN DIPLOMACY—Lectures, 2 hours, second term. Professor MOORE

VIII—INTERNATIONAL LAW—Lectures, 2 hours. Professor MOORE

X—SEMINARIUM IN INTERNATIONAL LAW—Professor MOORE

*C—Criminal Law*

XI—CRIMINAL LAW, INCLUDING THE CONFLICT OF PENAL LAWS, AND EXTRADITION—Lectures, 2 hours. Professor MOORE

*D—Administrative Law*

XVI—COMPARATIVE ADMINISTRATIVE LAW—Lectures, 2 hours. Professor GOODNOW

XVII—LAW OF MUNICIPAL CORPORATIONS—Lectures, 2 hours, first term. Professor GOODNOW

XVIII—LAW OF TAXATION—Lectures, 2 hours, second term. Professor GOODNOW

XIX—MUNICIPAL POLITICS—Lectures, 2 hours, second term. Mr. KELLY

XX—SEMINARIUM IN ADMINISTRATIVE LAW—Professor GOODNOW

**Courses in Jurisprudence**

XXI—ROMAN LAW I—Sohm's Institutes of Roman Law, supplemented by lectures. 2 hours, first term. Professor MUNROE SMITH

XXII—ROMAN LAW II—Discussion of selected cases from the Digest of Justinian. 2 hours, second term. Professor MUNROE SMITH

XXIII—HISTORY OF EUROPEAN LAW (primitive Aryan, Old German, and Frankish Law; the canon law; the reception of Justinian law in mediæval Europe; the reaction against the Roman law, canon and civil, and the movement toward national codification)—Lectures, 2 hours. Professor MUNROE SMITH (1895-6, and alternate years following).

XXIV—COMPARATIVE JURISPRUDENCE—Lectures and discussions, 2 hours. Professor MUNROE SMITH (1894-5, and alternate years following).

XXV—INTERNATIONAL PRIVATE LAW (conflicts of private law)—Lectures and discussion of cases, 1 hour. Professor MUNROE SMITH

XXIX, XXX—SEMINARIA IN LEGAL HISTORY AND COMPARATIVE LEGISLATION—Professor MUNROE SMITH

**Literature**

(See page 70)

**Materia Medica and Therapeutics**

GEORGE L. PEABODY, M.D. .... *Professor*

**Courses**

Instruction in this department is both didactic and clinical.

I—The didactic course embraces general therapeutic considerations; modes of administering drugs; the individual drugs used in treating disease, their physiological effects and therapeutic uses, and the toxicological effects of such

of them as are poisons ; remedial measures other than the use of drugs, including electricity, dietetics, the use of water (including bathing and the administration of mineral waters) ; physical exercise, and the like.

The department has a full collection of all the drugs lectured upon, as well as of their important preparations. After each lecture every student has an opportunity of examining specimens of all the drugs and preparations that formed the subject of the lecture. 3 hours. Professor PEABODY

Required, in the second and third years, of candidates for the degree of M.D.

II—The clinical instruction in therapeutics is given at the bedside in the wards of the New York Hospital.

A large number of patients are presented to the class, and abundant opportunity is afforded of observing the modifications in the natural course of diseases which are produced by therapeutic procedures, including not only the action of drugs, but also the effects of such remedial measures as cold baths, wet packs, electricity, and the like.

Frequent opportunity is also given for the personal examination of patients by members of the class in attendance ; and the entire course of protracted diseases, with their variations in symptoms and physical signs as well as in their treatment, can thus be observed.

Facilities are also extended for witnessing the performance of autopsies in fatal cases as frequently as the hospital regulations permit.

Twice a week for three months (M. and Th. at 2.30 P.M.). Professor PEABODY

Optional, in the second and third years, for candidates for the degree of M.D. Medical students are recommended to attend this course in the third year only.

For the New York Hospital, see table of contents.

## Mathematics

JOHN HOWARD VAN AMRINGE, Ph.D., L.H.D., LL.D.....	<i>Professor</i>
THOMAS SCOTT FISKE, A.M., Ph.D.....	<i>Adjunct Professor</i>
FRANK NELSON COLE, A.B., Ph.D.....	<i>Professor</i>
JAMES MACLAY, C.E.....	<i>Instructor</i>
JONATHAN BRACE CHITTENDEN, A.M., Ph.D.....	<i>Tutor</i>
JOHN ETHAN HILL, Ph.B.....	<i>Tutor</i>
GEORGE HERBERT LING, A.M.....	<i>Assistant</i>
GEORGE BALTHASAR GERMANN, A.B.....	<i>Assistant</i>

## Courses

A—GEOMETRY, VOLUMETRIC AND SPHERICAL (Davies' Legendre, Books 6-9)—3 hours, first term.

ALGEBRA FROM QUADRATICS (Wells' College Algebra)—3 hours, second term. Professor FISKE

Required of freshmen in the School of Arts.

B—TRIGONOMETRY, PLANE, ANALYTICAL, AND SPHERICAL (Davies' Legendre)—2 hours. Dr. CHITTENDEN

Required of sophomores in the School of Arts.

I—ANALYTICAL GEOMETRY (Wentworth's)—3 hours. Professor VAN AMRINGE

Elective for juniors and seniors in the School of Arts.

II—PROJECTIVE GEOMETRY—2 hours. Mr. HILL

Elective for juniors and seniors in the School of Arts.

III—THEORY OF EQUATIONS AND SOLID ANALYTICAL GEOMETRY—3 hours. Mr. HILL

Elective for seniors in the School of Arts who have taken IX. Not given in 1894-5.

IV—DIFFERENTIAL AND INTEGRAL CALCULUS (Osborne's)—3 hours. Professor VAN AMRINGE

Elective for juniors and seniors in the School of Arts.

V—TRIGONOMETRY (as in Course III) AND ALGEBRA (Wells' College Algebra) FROM SERIES. Mr. MACLAY

Required of all first-year students in the School of Mines, except those in the course of Architecture.

VI—ANALYTICAL GEOMETRY (Wentworth's) THROUGH THE HYPERBOLA—4 hours, second term. Mr. MACLAY

Required of all first-year students in the School of Mines, except those in the course of Architecture.

VII—ANALYTICAL GEOMETRY (Wentworth's) FROM THE LOCI OF THE SECOND ORDER, AND DIFFERENTIAL AND INTEGRAL CALCULUS (Osborne's)—4 hours. Professor VAN AMRINGE

Required of second-year students in the School of Mines in the Engineering courses.

XIII—ADVANCED DIFFERENTIAL AND INTEGRAL CALCULUS—3 hours. Dr. CHITTENDEN

For A.M. and Ph.D.

XIV—ANALYTICAL THEORY OF CURVES OF DOUBLE CURVATURE AND CURVED SURFACES—3 hours. Mr. MACLAY

For A.M. and Ph.D.

XV—GENERAL THEORY OF ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS—3 hours. Mr. HILL

For A.M. and Ph.D.

XVII—THEORY OF INVARIANTS (based on treatises of Salmon and Gordan)—3 hours. Professor FISKE

For A.M. and Ph.D. Not given in 1895-6.

XVIII—THEORY OF SUBSTITUTIONS—3 hours. Professor COLE

For A.M. and Ph.D.

XIX—GENERAL THEORY OF FUNCTIONS (based on Forsyth and on Harkness & Morley)—3 hours. Professor FISKE

For A.M. and Ph.D.

XX—THEORY OF THE COMPLEX VARIABLE, AND ELLIPTIC FUNCTIONS—3 hours. Professor COLE

For A.M. and Ph.D. Not given in 1895-6.

### Equipment

In the equipment of the Department of Mathematics is a large number of models, charts, and instruments. An elaborate set of models illustrates the metric system of weights and measures. A set of about fifty models of elemen-

tary solid and spherical geometry is intended to exemplify the demonstrations contained in Davies' Legendre. These are made of cherry wood with markings of inlaid ebony, and are of unusually large size. There are several similar models representing the different plane sections of the cone. A series of wooden models, constructed by Schroeder of Darmstadt, also illustrates elementary solid geometry, and contains, in addition, examples of all the different forms of the surfaces of the second order. There is a series of models of descriptive geometry, also constructed by Schroeder. The horizontal and vertical projections are traced upon boards solidly joined together at right angles and of convenient size to allow in general the representation of three different models or of three different views of the same model. The form and construction suggest a division of these models into two classes: (1) the representation in metal of lines and surfaces, adjusted upon axes, the projections of several of their positions being given; (2) the representation of solid bodies in hard wood, including the exhibition of their plane sections in various directions and the intersections of different surfaces and solids.

A collection of models, which was presented to the department by President Low, having been purchased by him from the German University Exhibit at the Chicago Exposition in 1893, illustrates analysis situs, theory of functions of a complex variable, surfaces of higher order, their singularities and curvature, and line-geometry.

A series of charts illustrates the theory of plane algebraic curves, especially those of the fourth order, the resolution of a higher plane singularities into equivalent elementary singularities, the expression of functions by means of infinite series and infinite products, and conformal representation by means of algebraic and elliptic functions.

Among the instruments of the department are an Amsler's planimeter, many instruments for executing geometrical constructions upon blackboard and paper, a collection of curves of different sizes in wood and hard rubber, and several pieces of apparatus for describing the conic sections upon the blackboard in accordance with the well known kinematic methods.

The collection of mathematical works in the Columbia College Library is especially rich in sets of collected works of mathematicians. All the mathematical journals of any importance are regularly received, and the library possesses complete sets of most of them.

## Mechanical Engineering

(See page 65)

### Mechanics

ROBERT SIMPSON WOODWARD, C.E., Ph.D.....	<i>Professor</i>
MICHAEL IDVORSKY PUPIN, Ph.D.....	<i>Adjunct Professor</i>
JOSEPH CLEMENT PFISTER, A.M.....	<i>Tutor</i>
WILLIAM HORATIO FREEDMAN, C.E., E.E.....	<i>Tutor</i>

### General Statement

Courses I and III-IX may be pursued as minors for the degree of A.M. and Ph.D. by candidates who have not taken such courses in undergraduate work.



3 hours per week for one term constitutes a minor for the degree of A.M., and 3 hours per week for two terms a minor for the degree of Ph.D.

Time equivalent to 3 hours per week for four terms devoted to Courses X-XVIII is required as a major for the degree of Ph.D., and 3 hours per week for two terms as a major for the degree of A.M. For a minor for the degree of Ph.D., a time equivalent to 2 hours per week for two terms is required.

Courses X and XI will alternate from year to year with XII and XIII, X and XI being assigned to the year 1895-6. Likewise, Courses XIV and XV alternate with XVI and XVII, XIV and XV being assigned to the year 1895-6.

### Courses

**I—ANALYTICAL MECHANICS**—As a text for this subject, Rankine's Applied Mechanics is used; attention being confined chiefly, however, to Part I, Principles of Statics (including hydrostatics); Part III, Principles of Kinematics; and Part V, Principles of Dynamics (including hydrodynamics). This text is supplemented by lectures on special topics, by written solutions and discussions of typical problems, and by demonstrations with the aid of apparatus. Particular attention is given to the doctrine of units and dimensions of units, and to problems affording actual applications of principles. 3 hours. Professor WOODWARD

Required of students in Engineering; and it is recommended to all students who may desire to pursue the higher applications of the science in dynamical astronomy, electricity and magnetism, thermodynamics, elasticity and physical geodesy.

**II—ELEMENTARY MECHANICS**—Loney's Elements of Statics and Dynamics is used as a text. This work is supplemented by demonstrations with apparatus, by lectures on the theory of dimensions and units, and by lectures, chiefly historical, on the higher applications and results of the science. 2 hours. Mr. PFISTER

Offered especially as an elective to students of the junior year in the School of Arts. It is designed to afford as good a knowledge of the science as can be had without the calculus. It assumes that the student has passed in Course III of the department of Mathematics, or its equivalent.

**III—THEORETICAL MECHANICS**—Ziwet's Elementary Treatise on Theoretical Mechanics is used as a text. This requires familiarity with the elements of the differential and integral calculus. 2 hours. Mr. PFISTER

Designed to be supplementary to Course II, and is offered as an elective to those desiring a knowledge of the general principles of the science rather than the special principles essential to engineering.

**IV—THERMODYNAMICS**, with special reference to its bearing on the theory of caloric engines—3 hours, first term. Professor PUPIN

Required of all students in Engineering.

**V—ELEMENTARY THERMODYNAMICS**—The ground covered by this course is indicated by Maxwell's Theory of Heat, which is used as a text. In addition, lectures are given on the more advanced principles and results of the science. 2 hours, one term. Professor WOODWARD

This course is offered as an elective to students of the senior year in the School of Arts. Its pre-requisite is Course II, or an equivalent.



VI—THEORY OF DYNAMO AND MOTOR (INTRODUCTORY), covering elements of the theory of electric, magnetic, and electro-dynamic potential, theory of electro-magnetic and electro-dynamic induction and its application to the theory of an ideal dynamo—3 hours, first term. Professor PUPIN

Required of students in Electrical Engineering.

VII—THEORY OF DYNAMO AND MOTOR (DIRECT CURRENT), covering Hopkinson's theory of dynamo and motor designing, and Froehlich's method of dynamo and motor testing—3 hours, second term. Professor PUPIN

Required of students in Electrical Engineering.

VIII—THEORY OF ALTERNATORS AND TRANSFORMERS—3 hours, first term. Professor PUPIN

Required of students in Electrical Engineering.

IX—THEORY OF VARIABLE CURRENTS, particularly the theory of high frequency and high potential currents—2 hours, second term. Professor PUPIN

Required of students in Electrical Engineering.

\*IX (a)—ELECTRICAL MEASUREMENTS

\* 1. A mathematical treatment of electrostatics, including theory of potential, capacity, specific inductive capacity, electrometer.

2. A mathematical treatment of magnetic induction, electric current, current sheets, resistance measurements, galvanometer.

2 hours. Mr. FREEDMAN

X—ADVANCED THEORETICAL MECHANICS—General principles of statics and kinetics; methods of Lagrange, Hamilton, and Jacobi; applications of the doctrine of energy to the interpretation of mechanical phenomena. 2 hours. Professor WOODWARD

XI—THEORY OF THE POTENTIAL FUNCTION—General exposition of theory; derivation of equations of Laplace and Poisson and theorems of Gauss, Green, and Stokes; with applications to problems in gravitation, hydromechanics, static electricity, and terrestrial magnetism. 2 hours. Professor WOODWARD

XII—GEODYNAMICS—Amount and distribution of earth's mass; phenomena of precession, nutation, and oceanic tides; variation of density, gravity, and pressure within the earth; thermal properties and secular contraction of the earth; mechanics of crumpling and crust movements. 2 hours. Professor WOODWARD

XIII—MATHEMATICAL THEORY OF ELASTICITY—Analysis of stresses and strains and expression of strains in terms of stresses; discussion of potential energy of strained media and the constants essential to define them; theory of wave motion in elastic media, with applications to sound and light. 2 hours. Professor WOODWARD

XIV—MAXWELL'S THEORY OF ELECTRICITY AND MAGNETISM—2 hours.

XIV (a)—THEORY OF BESSEL'S FUNCTIONS AND SPHERICAL HARMONICS—I hour. Professor PUPIN

XV—ELECTROMAGNETIC THEORY OF LIGHT—3 hours, first term. Professor PUPIN

XVI—ADVANCED THERMODYNAMICS, including its applications to thermo-electricity and thermo-magnetism, physical chemistry, and caloric engines—2 hours. Professor PUPIN

XVII—ADVANCED THEORETICAL ELECTRICAL ENGINEERING, consisting of a discussion of the practical aspects of high frequency and high potential currents ; theory of the telephone ; theory of transmission of signal through cable possessing considerable capacity ; theory of long-distance transmission of power by direct, alternating, and polyphase currents ; conduction of currents through gases and dielectrics—3 hours, second term. Professor PUPIN

XVIII—THEORY OF OSCILLATIONS—2 hours. Professor PUPIN

### Equipment

The department is supplied with various machines and models of machines for illustrating the so-called mechanical powers, with balances, dynamometers, air pump, hydraulic pumps, and other apparatus to which reference is made in the course of theoretical studies. In addition to its own appliances, the department has access to the apparatus of the allied departments, especially that of the department of Electrical Engineering, thus affording the facilities of an extensive equipment to the students in advanced work.

## Microscopy and Microbiology

(See page 52)

## Mineralogy and Metallurgy

THOMAS EGGLESTON, E.M., Ph.D., LL.D.....*Professor*

### MINERALOGY

ALFRED J. MOSES, E.M., Ph. D.....*Adjunct Professor*

LEA MCL. LUQUER, C.E., Ph.D.....*Tutor*

HERBERT P. WHITLOCK, C.E.....*Assistant*

### METALLURGY

JOSEPH STRUTHERS, Ph.B., Ph. D.....*Tutor*

PARKER C. MCILHINEY, A.M., Ph.D .....*Assistant*

### Courses in Mineralogy

I—BLOWPIPE ANALYSIS—The tests for 40 elements and the qualitative analysis of minerals, alloys, and slags. 1 hour conference, and afternoons of alternate weeks laboratory, 1 term. Professor MOSES, Dr. LUQUER and Mr. WHITLOCK

Required of first-year students in the School of Mines in the courses of Mining Engineering, Chemistry, Metallurgy, and Geology. Open as an elective to seniors in the School of Arts.

II—CRYSTALLOGRAPHY—History, general characters, laws, forms, simple measurements, and calculations. Lectures and conferences 2 hours, 1 term. Professor MOSES

Required of first-year students in the School of Mines in the courses of Mining Engineering, Chemistry, Metallurgy, and Geology. Open as an elective to seniors in the School of Arts.

III—DESCRIPTIVE AND DETERMINATIVE MINERALOGY—Study of 200 important species, their properties, uses, and methods of determination. 2 hours lectures, 3 hours laboratory, second term of first year and first term of second year. Professor MOSES and Dr. LUQUER

Required of first- and second-year students in the School of Mines, in the courses of Mining Engineering, Chemistry, Metallurgy, and Geology. Open to candidates for the degree of A.M., or for the degree of Ph.D., in their first year, whose minor subject is Mineralogy. Pre-requisite: Courses I and II.

IV—THE MINERALS OF BUILDING STONES—Study of 70 species, their properties, methods of determination, and their economic effect on building stones. 2 hours lectures, 2 hours laboratory. Professor MOSES and Dr. LUQUER

Required of second-year students in the School of Mines in the course of Civil Engineering. Open to candidates for the degree of A.M. whose minor subject is Mineralogy.

V—ELEMENTARY COURSE ON TWENTY-FIVE COMMON MINERALS—12 lectures in first term of third year as introduction to study of geology. Professor MOSES

Required of third-year students in the School of Mines in the course of Architecture.

VI—OPTICAL MINERALOGY—Introductory to Geology V. 2 lectures and 2 hours laboratory, for two months of second term of second year. Dr. LUQUER

Required of second-year students in the School of Mines in the courses of Mining Engineering, Metallurgy, and Geology.

VII—MATHEMATICAL CRYSTALLOGRAPHY—Measurement of angles of crystals, methods of calculation and delineation. Professor MOSES

Required of third-year students of the School of Mines in the course of Geology. Open to candidates for the degree of A.M. whose major subject is Mineralogy, or candidates for the degree of Ph.D. whose minor subject is Mineralogy. Pre-requisite: Course II.

VIII—OPTICAL MINERALOGY—Principles, apparatus, and distinguishing characters. Dr. LUQUER

Required of third-year students in the School of Mines in the course of Geology. Open to candidates for the degree of A.M. whose major subject is Mineralogy, or to candidates for the degree of Ph.D. whose minor subject is Mineralogy.

IX—MINERALOGY—Supplementary to Course III. Professor MOSES

Open to candidates for the degree of Ph.D. whose minor subject is Mineralogy. Pre-requisite: Courses I, II, III, or equivalent.

X—SYSTEMATIC MINERALOGY—Classification: physical and chemical relations of species and groups; general study of physical properties, with especial attention to measurement, methods of calculation and delineation of crystals; optical characters; and a critical study of some assigned group. 20 hours, two years. Professor MOSES and Dr. LUQUER

Open to candidates for the degree of Ph.D. whose major subject is Mineralogy. Pre-requisite: Courses I, II, III, or equivalent.

### Equipment

The work of the students in the undergraduate courses and in general mineralogy is performed in the blowpipe laboratory, a large room with conference tables and seats for about seventy-five men. In this room are the student collections of minerals and crystal models.

For the more advanced work the department uses a smaller room equipped for microscopic and goniometrical work. The equipment includes five litho-

logical microscopes, five reflection goniometers, a Duboscq lantern with numerous attachments, three polariscopes, a specific gravity balance, and three section cutters.

The present mineralogical collection consists of about 26,000 labelled specimens, and includes, in addition to the main collection, a large suite of pseudomorphs, a collection illustrating the physical character of minerals, a collection of natural crystals, and a collection of New York City minerals. Arranged in wall cases are large specimens, showing the associations of minerals. There are also three separate student collections of average specimens, more than 6000 in number; several thousand unlabelled specimens used in determinative work, about 500 sections of minerals, and 1500 crystal models in wood and glass.

Among the collections of minerals that have been presented to the department from time to time are some that possess historic value, among which may be mentioned the Gillmore collection, made in Paris under the direction of the Abbé Haüy and presented by the late Gouveneur Kemble of West Point. A collection of American minerals presented by the late George T. Strong. A collection of Schulsberg (Wis.), stalactites exhibited at the Sanitary Fair, a fine suite of Russian minerals presented by the Czar, two of the finest cerussites known, the famous collection of Professor How, of King's College, Nova Scotia, and a very valuable collection made by Dr. Egleston in Japan.

In addition, a large number of gifts of one or more specimens have been received, and these have been supplemented by careful purchasing and exchanging, so that the collection fairly ranks as one of the two or three great mineral collections of this country.

### Courses in Metallurgy

**I—GENERAL METALLURGY**—As an introduction to Courses II, III, IV, and V, history, definition of terms, calorimetry, refractory materials, furnaces, fuels (natural and artificial), chimneys, blast engines, regulators, hot air stoves, tuyeres, pyrometry, furnace gas analysis.

Text books: Percy's Metallurgy of Fuels, Iron, and Steel, Bauermann's Metallurgy of Iron, Greenwood's Metallurgy of Iron and Steel, Egleston's Metallurgical Tables.—3 hours lectures and 1 hour review, first term. Professor EGGLESTON and Dr. STRUTHERS

Required of third-year students in the courses of Mining Engineering, Metallurgy, Geology, and Chemistry in the School of Mines. Students in Metallurgy have an additional hour per week during the first half year for review by Dr. Struthers.

**II—THE METALLURGY OF IRON AND STEEL.**—*Cast Iron*: Discussion of ores, effect of impurities, construction of the blast furnace and auxiliary apparatus. Theory of the process, detailed discussion of practice, slags, calculation of charges, foundry practice, malleable cast iron.

*Weld Iron*: Properties, effect of impurities, knobbling process, German process, fining, puddling, rolls, shears, hammers, piling, reheating, and general mill work.

Direct methods for wrought iron: Catalin, Bloomary, Chenot, Blair, and other processes.

*Steel* : General description, effect of impurities, direct methods of manufacture, cementation process, crucible process, acid open-hearth process, acid Bessemer process, basic open-hearth process, basic Bessemer process, pit practice of handling ingots, general mill-work, including reheating, rolling, rails, tires, wire, and uses of scrap steel.

Text books : H. M. Howe's *Metallurgy of Steel* ; Percy's *Metallurgy of Fuels, Iron, and Steel* ; Greenwood's *Metallurgy of Iron and Steel* ; Egleston's *Metallurgical Tables*. 3 hours lectures and 1 hour review, second term. Dr. EGLESTON and Dr. STRUTHERS

Required of third-year students in the courses of Mining Engineering, Metallurgy, Geology, and Chemistry in the School of Mines. Students in the course of Metallurgy have an additional hour during the second term for review and supplementary work by Dr. Struthers.

III—METALLURGY OF THE METALS.—*Copper* : Properties, effect of impurities, ores, roasting, shaft-furnace treatment, reverberatory-furnace treatment, treatment of native ores at Lake Superior, treatment of pure and poor sulphide ores, treatment of impure sulphide ores, Bessemerizing copper matter, treatment of oxides, wet processes, condensation and treatment of furnace gases, electrolytic refining processes.

*Lead* : Properties, effect of impurities, ores, roasting and reaction process, roasting and reduction process, precipitation processes, desilverization, refining.

*Silver* : Ores, roasting furnaces, fusion processes, amalgamating processes, wet processes, desilverization, cupellation, refining.

*Gold* : Ores, hand and machine hydraulic processes, stamp milling, parting processes, chlorination processes, cyanide process.

*Zinc* : Properties, ores, English, Belgian, and Silesian processes, refining and mechanical treatment.

*Tin* : Properties, ores, mechanical treatment, reverberatory- and shaft-furnace processes, refining.

*Mercury* : Properties, ores, treatment in Austria, Spain, and California.

*Bismuth* : Distillation process, refining.

*Arsenic* : Distillation process, refining.

*Antimony* : Processes, refining.

*Nickel and Cobalt* : Concentration, separation, refining.

*Aluminium* : Furnace and electrolytic processes.

Text books : E. D. Peter's, Jr., *American Methods of Copper Smelting* ; H. O. Hofman, *Lead Smelting* ; T. Egleston, *Metallurgy of Gold, Silver, and Mercury*. 3 hours lectures and 1 hour review. Dr. EGLESTON and Dr. STRUTHERS

Required of the fourth-year students in the courses of Mining Engineering, Metallurgy, Geology, and Chemistry. Students in the course of Metallurgy in the School of Mines have one additional hour per week during entire year for review and supplementary work by Dr. Struthers.

IV—ADVANCED COURSE IN CALORIMETRY—Determination of practical and theoretical values of various combustibles. 2 hours instruction and 6 hours laboratory practice. Dr. EGLESTON and Dr. STRUTHERS

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel: course I.

V—ADVANCED COURSE IN PYROMETRY—Determination of temperatures of



furnace gases from combustion. 2 hours instruction and 6 hours laboratory practice. Dr. EGGLESTON and Dr. STRUTHERS

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy.  
Pre-requisite or parallel: course I.

VI—MICROSCOPIC STUDY OF IRON AND STEEL—Cutting, grinding, and preparing specimens and microscopic examinations of same. 2 hours instruction and 6 hours laboratory practice. Dr. EGGLESTON and Dr. STRUTHERS

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy.  
Pre-requisite or parallel: course II.

VII—STUDIES OF THE SOLUBILITIES OF METALS AT HIGH PRESSURES—Chemical examination of the metals treated. 2 hours instruction and 6 hours laboratory practice. Dr. EGGLESTON

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy.  
Pre-requisite or parallel: course I.

VIII—STUDIES OF THE PHYSICAL PROPERTIES OF METALS—Determination of hardness, heat, and electrical conductiveness under various circumstances. 2 hours instruction and 6 hours laboratory practice. Dr. EGGLESTON

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy.  
Pre-requisite or parallel: course I.

### Equipment

There is a lecture-room containing a large number of models of various furnaces, blowers, fans, heaps, stalls, lixiviation plants, Bessemer steel plant, and rolls, used in illustration of lectures, both primary and supplementary. A collection of 1200 large diagrams and 1200 lantern slides also used in lecture illustration, and a collection of ores, refractory materials for furnace construction, and fuels; also used in lecture illustration.

The collections illustrating the department of Metallurgy include models of furnaces and a very large number of drawings and tracings, in most cases copies from the working drawings of establishments in actual operation. This collection embraces several hundred tracings collected from the best types of works in this country and abroad, many of them being sufficiently detailed to be used as construction drawings.

The metallurgical collection, properly speaking, embraces about 3000 specimens, illustrating every stage of many prominent metallurgical processes. Many of these specimens have been analyzed or assayed. They are open to the inspection of the students.

The metallurgical laboratory, in addition to a general equipment for analytical work, has a number of furnaces for heat investigations. There are collections of the various modern calorimeters, of calorimetric, optical, photometric, and thermo-electric pyrometers; apparatus for analyzing furnace gases; equipment for iron and steel sections; lathes, grinders, polishers, and microscopes especially adapted for examination of opaque objects; a collection of apparatus for obtaining direct pressure and pressures by the application of heat; and a machine, constructed by Dr. Egleston, for the study of the physical properties of metals.

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It is designed to make the lectures in both years as practical as possible, and for this purpose the economic details of cost are given whenever they can



be obtained from authentic sources. Special attention is given to the ores of the United States, to ores which are difficult to treat, to the solution of practical problems which may occur, and to changes which different economic relations are liable to cause in the treatment of the same ore in different localities.

As an application of the lectures, the students in the course in Metallurgy in the School of Mines are required to work out a project, and to present working drawings and estimates for the erection of works to treat a given ore under stated conditions. The problems given are those which require solution in some parts of the United States.

The students in the course in Metallurgy in the School of Mines have practical laboratory work in measuring furnace temperatures and in ascertaining the calorific power of fuels by means of calorimeters.

## Mining

HENRY S. MUNROE, E.M., Ph.D. .... *Professor*  
ROBERT PEELE, E.M. .... *Adjunct Professor*

## Courses

### I—EXCAVATION AND TUNNELLING—3 hours, first term. Professor PEELE

Excavation of earth—tools and methods employed, support of excavations, special methods for quicksand and other water-bearing material; steam shovels and other mechanical excavators; handling and transportation of excavated material; tables of comparative costs. Dredging—description of machines and methods for canal, river, and harbor work; handling of dredged material; costs of dredging. Explosives—black powder, nitro-glycerine and its compounds, and other high explosives; their manufacture and use. Excavation of rock—hand and machine drills, methods of blasting, mammoth blasts, submarine blasting. Quarrying—plant and methods for quarrying different rocks. Tunnelling—methods of driving and timbering; handling and transportation of excavated material; drainage and ventilation of tunnels; submarine tunnels; permanent lining of tunnels; accidents in tunnelling; location of tunnels.

Required of second-year students in the courses of Mining Engineering, Civil Engineering, Metallurgy, and Geology.

### II—BORING AND SHAFT-SINKING—3 hours for 3 months, second term. Professor PEELE

Boring—methods and appliances for deep boring; cable tool or oil well method; boring with diamond drill, for prospecting and other purposes. Shaft sinking—methods and tools employed in soft material or in rock; special methods of sinking in water-bearing formations, quicksand; drainage of shafts; handling and hoisting of excavated material. Shaft timbering and other systems of lining employed in special cases.

Required of second-year students in the courses of Mining Engineering, Metallurgy, and Geology.

### II(A)—MINING AND SUPPORT OF MINE EXCAVATIONS—3 hours for 1 month. Second term, second year. Professor MUNROE

Theoretical considerations, methods of breaking ground in coal and metal mining, and support of mine excavations by pillars of mineral, by timbering, by masonry, and by rock filling.

### III—EXPLORATION, DEVELOPMENT, AND METHODS OF WORKING—4 hours, first term. Professor MUNROE

Mineral deposits, characteristics of beds, masses, veins, and other deposits, and the irregularities and disturbances to which they are subject, as affecting the work of exploration and mining. Examination and survey of mineral properties; relation of topography to geological structure; construction of maps and sections; and tracing of probable outcrops as a guide to exploration. Prospecting by ditches, pits, and deep boring. Development; choice of methods; location of openings. Working of deposits and support of excavations; methods applicable to deposits of different thickness, inclination, and character. Coal mining; vein mining; working of thick deposits and soft-ore bodies. Salt mining. Surface workings.

Required of third-year students in the courses of Mining Engineering, Metallurgy, and Geology.

IV—ORE DRESSING AND THE MECHANICAL PREPARATION OF COAL—4 hours for 11 weeks, second term. Professor MUNROE

The general principles and theory of dressing; preliminary operations; hand dressing; cleansing; crushing; jigging with and without preliminary sizing; slime concentration; and description of typical dressing works and coal-washing plants in this country and abroad.

Required of third-year students in the courses of Mining Engineering, Metallurgy, and Geology.

V—ORE-DRESSING LABORATORY—I afternoon for 7 weeks, second term. Professor MUNROE

During the second term of the fourth year a portion of the time assigned to ore-testing is devoted to the mechanical assaying of ores and coal by hand jigging and vanning.

Required of fourth-year students in the courses of Mining Engineering, Metallurgy, and Geology.

VI—MINE ENGINEERING—2 hours first term and 1 hour second term. Professor MUNROE

Extraction; methods and machinery; handling mineral in working places; underground haulage. Surface handling and transportation; arrangements for loading and unloading cars and vessels, and for storing of minerals. Mineral railroads. Common roads. Drainage; sources of mine waters; methods for the control and raising of water; dams; drainage levels. Water supply. Ventilation; air of mines; mine gases; methods of ventilation; control and measurement of air currents. Accidents to men in shafts, levels, and working places; fire-damp and dust explosions; mine fires; inundations; rescue and relief of men.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

VII—MINE PLANT—3 hours first term and 2 hours second term. Professor PEELE

Descriptions and critical discussion of the machinery employed in hoisting, drainage, and ventilation; air compressing plant; types of plant best adapted to different conditions; erection and care of machinery; accidents, breakage, and repairs.

Lectures are given also upon the design of timber, masonry, and iron constructions, head-frames, hoisting cages, ventilating fans, mine buildings, and other portions of mining plant.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

VII(A)—MINE CONSTRUCTIONS—4 hours for 3 weeks, second term, third year. Professor PEELE

Building-stones; brick; limes; cements and concretes. Foundations in various soils; masonry, and timber construction, with special reference to mine work; mine buildings; trestles.

VIII—DESIGN OF MINE PLANT—5 afternoons first term and 4 afternoons second term. Professor PEELE

The students are assigned problems involving the design and construction of mine plant, in

connection with the development of a mine. This work supplements the lectures on the design of mining machinery, involving reading and study, and the preparation of working drawings, bills of material, specifications, and estimates.

The work is done under constant supervision and advice in the draughting-room.

Required of fourth-year students in the course of Mining Engineering.

#### IX—MINE SURVEYING—I hour, second term. Professor MUNROE

This course supplements the practical work in underground surveying in connection with the summer school in mining. It includes the general principles of underground surveying, the construction of mine maps and models of mine workings, the measurement of contracts, the location of lines for new work.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

#### X—ADMINISTRATION AND MINE ACCOUNTS—I hour, second term, fourth year. Professor MUNROE

Administration, organization, and business management, mine accounts, and cost sheets. Examination and valuation of mines.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

### Summer School

XI—THE SUMMER SCHOOL OF PRACTICAL MINING is held in June and July, at some mine or mines selected for the purpose, in the vacation between the third and fourth years, and lasts five weeks. Professor PEELE and Assistant in Mining.

The course of instruction includes five weeks' detailed study of the plant and methods of working at some important mine or mines; practical mine surveying; excursions to other mines and mining regions, and geological work, surface and underground.

The course of study includes the subjects of shaft sinking, drifting, stopping, timbering, underground haulage, hoisting, mine drainage, ventilation, surface plant and machinery, mine buildings, shops, houses, water supply, drainage, organization, and administration. The students are divided into small squads, and assigned each day to a foreman, or working gang of miners, for the study of some definite subject. Each squad of students is visited several times during the day by the instructor, who supplements the explanations of the miners, and indicates subjects demanding special study and observation. Manual labor, and the acquirement of manual dexterity by the student, are subordinated to the development of his powers of observation, and to the careful and critical study of the work going on about him, and the recording of his observation and study in notes and sketches taken on the spot. The students' note-books are examined and criticised each evening. By thus carefully systematizing and directing the work of the student his time is economized, and as much ground is covered in a week as would be in a month under ordinary circumstances, and the work is done more thoroughly.

This summer school has been in successful operation since 1877, and has proved itself an indispensable adjunct to the course of instruction. It bears the same relation to the study of mining as laboratory work to the study of chemistry or physics, or clinical instruction and hospital practice to the study of medicine.

In 1893 the summer school was held at the Mount Hope and Franklin iron mines, Morris Co., N. J., and at the collieries of Messrs. Cox & Co., at Oneida, Schuylkill Co., Pa. A visit was made also to the large strippings of the mammoth vein at Hollywood and Latimer. The last week of the session was spent at the mining exhibit of the World's Fair, Chicago.

In 1894 the summer school was held at the Tamarack and Osceola copper mines, near Calumet, Michigan. After completing the regular work, visits were made to the smelting works at Hancock and Dollar Bay, to the Tamarack concentration mill, and to the Central mine. Finally, a sixth week was occupied with the Professor of Geology in surface geological work in the same region.

In 1895 the summer school was held at Central City, Colorado, in the Gilpin County gold district. The regular work was done in the Gunnel, Saratoga, and Gregory-Bobtail mines, and in several of the Black Hawk gold mills. Visits were made also to other gold mines in the vicinity; to the Pelican-Dives silver mine, at Silver Plume, sampling works at Georgetown, and finally to two of the large smelting and reduction works near Denver.

The usual field geological work was carried on at Golden, Colo.

Required of students in the courses of Mining Engineering, Metallurgy, and Geology in the vacation between their third and fourth years.

Optional to the same students, if without conditions, in the vacation between their second and third years.

### Graduate Courses

Special courses, consisting of personal instruction, reading, and experimental investigation, will be arranged for advanced students according to their individual needs. These courses vary in difficulty and in the amount of time necessary, according as the student is a candidate for the degree of A.M. or Ph.D., and according as he pursues Mining as a major or a minor subject. The following are suggested:

XII—COAL MINING—2 hours.

XIII—ORE MINING—2 hours.

XIV—COAL WASHING—I hour.

XV—ORE DRESSING—I hour.

XVI—EXAMINATION OF A MINERAL PROPERTY, OR A MINE—4 to 6 weeks devoted to field and underground work in the Summer School of Practical Mining, with conferences at convenience of professor.

XVII—EXAMINATION OF A COAL-WASHING PLANT, OR AN ORE-DRESSING PLANT—4 to 6 weeks' work in the mill and in the laboratory, with conferences.

XVIII—SPECIAL PROBLEMS AND ORIGINAL INVESTIGATIONS IN ORE-DRESSING AND MINING AS ASSIGNED—With conferences, laboratory and field work as required.

### Equipment

MINING MUSEUM—The subject of mining is illustrated by collections of mine maps, working drawings, diagrams, photographs, models, mining tools, mining machines, ores and products of dressing works, and surveying apparatus.

Maps of coal and metal mines of this and other countries. Working drawings, diagrams, and photographs of mine plant, and of mining and dressing machinery. Models of mines; of shafts, tunnels, and galleries, illustrating methods of sinking, driving, timbering, tubbing, and walling. Models of deep boring apparatus, shaft head gear, hoisting engines, man engines, pumps, ventilators, safety cages, mine cars, crushers, stamps, ore washers, shaking tables, and other dressing machines. Mining tools and mining machines; picks, shovels, sledges, drills, blasting apparatus, lamps, safety lamps, anemometers, hand-power and machine drills. Ores and dressing products from Clausthal, Lake Superior, Missouri, and elsewhere. Surveying instruments, geological compasses and clinometers, attraction compasses, dipping needles, hanging



compasses and arcs, transits, lamp signals, rods, and apparatus for plumbing and measuring shafts.

Owing to lack of room the greater part of these collections are not on exhibition at present.

LECTURE ILLUSTRATIONS—The lectures on mining are illustrated by over 1600 blue prints from negatives made for the purpose. These prints are collected in scrap-books illustrating the different courses of lectures, and each student has the use of one of these books for reference during the lecture, and for home study. These blue prints have many advantages over the usual form of lecture illustrations by lantern slides or wall diagrams. The latter are, however, used when necessary to supplement the blue prints.

ORE-DRESSING LABORATORY—Contains crushing and concentrating machinery, and the necessary apparatus for sampling and testing ores.

MINES AND DRESSING WORKS—Numerous coal, iron, and other mines are easily accessible from New York in from one to four hours by rail. Magnetic iron mines in New York, New Jersey, and Pennsylvania; hematite mines in the same states, and in Connecticut; anthracite mines in Pennsylvania; zinc mines in New Jersey and Pennsylvania. New York and adjacent states produce each year more than half the pig-iron and coal, and over one third of the total value of the mineral product of the whole country. New York City is the headquarters of numerous corporations operating mines and metallurgical works in this and other countries, and is one of the most important mining centres of the world. Within a radius of one hundred miles of New York City may be studied the best practice in mining under most varied conditions, and the most modern and effective mining and dressing machinery in the country. By going a little farther one may reach the bituminous coal regions and natural gas and oil fields in one direction, and the pyrites deposits of Vermont and Canada in the other; while the excursions of the summer class in mining extend as far as the copper and iron regions of Lake Superior, which can be reached at moderate cost by taking advantage of the steamers plying on the great lakes.

## Neurology

M. ALLEN STARR, M.D.....	<i>Professor</i>
FREDERICK PETERSON, M.D.....	<i>Chief of Clinic</i>
WILLIAM H. CASWELL, M.D.....	<i>Clinical Assistant</i>
MORTON R. PECK, M.D.....	<i>Clinical Assistant</i>
PEARCE BAILEY, M.D.....	<i>Clinical Assistant</i>
LOUIS F. BISHOP, M.D.....	<i>Clinical Assistant</i>
C. E. ATWOOD, M.D.....	<i>Clinical Assistant</i>
A. W. FERRIS, M.D.....	<i>Clinical Assistant</i>
LEWIS A. CONNOR, M.D.....	<i>Clinical Assistant</i>
WILLIAM B. NOYES, M.D.....	<i>Clinical Assistant</i>
ARCHIBALD CAMPELL, M.D.....	<i>Clinical Assistant</i>

## Courses

I—THE DISEASES OF THE MIND AND NERVOUS SYSTEM—Didactic lectures, 1 hour for five months; and 6 demonstrations, illustrated with the magic lantern, of the pathology of nervous diseases. Professor STARR

Required, in the second and third years, of candidates for the degree of M.D.

II—CLINICAL LECTURES AT THE VANDERBILT CLINIC—At these clinics all forms of nervous disease, including insanity, are demonstrated. During the months of didactic instruction the clinics are so arranged as to illustrate the clinical side of the subject lectured upon. 1 hour. F. at 2 P.M. Professor STARR

Required, in the second and third years, of candidates for the degree of M.D.

III—PRACTICAL INSTRUCTION IN NEUROLOGY—"Section teaching," by the Chief of Clinic, at which a division of ten students is taught the practical examination of nervous patients, including electro-diagnosis and electro-therapeutics. 6 lessons for each student in the Vanderbilt Clinic. Dr. PETERSON

Optional, in the third year, for candidates for the degree of M.D.

IV—INSANITY—4 clinics at the Ward's Island Insane Asylum. Dr. PETERSON

Optional, in the second and third years, for candidates for the degree of M.D.

## Normal Histology

(See page 111)

## Obstetrics

JAMES W. McLANE, M.D.....	<i>Professor</i>
ERVIN A. TUCKER, M.D.....	<i>Tutor</i>
GEORGE L. BRODHEAD, M.D.....	<i>Instructor</i>

## Courses

I—THEORY AND PRACTICE OF OBSTETRICS—Lectures, 3 hours from October 1st to March 15th. Professor McLANE

Required, in the third year, of candidates for the degree of M.D.

II—RECITATIONS AND DEMONSTRATIONS—One hour a week, for each student in the second year of the new curriculum. One sixth of the class receives instruction daily, by recitations and demonstrations, in which specimens and models from the anatomical, physiological, and pathological museums are used. Dr. TUCKER

Required, in the second year, of candidates for the degree of M.D.

III—PRACTICAL INSTRUCTION AT THE SLOANE MATERNITY HOSPITAL—Members of the graduating class in medicine are required each to attend at this hospital a certain number of cases of labor. For this purpose the students of the third year are divided, at the beginning of the academic year, into sections of eight, each section remaining on duty for one week. During this time they are furnished with lodgings, free of charge, on the grounds of the Medical School. Their rooms are connected with the hospital by electric wires, so that they may be summoned quickly to cases of emergency. Daily bedside instruction is given by the Instructor, who is the Resident Physician at the Sloane Hospital, and an examination on the work of the week is held there by him every Saturday. A daily clinical lecture is also given at the hospital, and instruction upon the manikin. Dr. BRODHEAD

Required, in the third year, of candidates for the degree of M.D.



## The Sloane Maternity Hospital

(See table of contents.)

This is upon the grounds of the College of Physicians and Surgeons, and the service of the hospital is under the exclusive direction of the Professor of Obstetrics, the Instructor being also the Resident Physician, as above stated.

The number of deliveries averages over nine hundred a year. These, with the obstetric operations, and the subsequent treatment of women and infants, afford invaluable bedside experience, such as is offered at no other medical school in this country.

## Ophthalmology

HERMAN KNAPP, M.D.....	<i>Professor</i>
CHARLES H. MAY, M.D....	<i>Chief of Clinic and Instructor in Ophthalmoscopy</i>
JOHN HERBERT CLAIBORNE, M.D.,	<i>Clinical Assistant and Instructor in Refraction and Motility</i>
WARD A. HOLDEN, M.D.....	<i>Clinical Assistant</i>
HENRY H. TYSON, M.D.....	<i>Clinical Assistant</i>
JACKSON M. MILLS, M.D.....	<i>Clinical Assistant</i>
EDWARD B. COBURN, M.D.....	<i>Clinical Assistant</i>
ALEXANDER DUANE, M.D.....	<i>Clinical Assistant</i>
CURTIS B. CARTER, M.D.....	<i>Clinical Assistant</i>

## Courses

I—CLINICAL LECTURES, AT THE VANDERBILT CLINIC, UPON THE DISEASES OF THE EYE—In selected cases the diagnosis is made, treatment is applied, and operations are performed before the class.

After the lectures, as opportunity offers, microscopic demonstrations of the pathological histology of the eye are made by Dr. Holden. 1 hour throughout the academic year. Tu. at 3 P.M. Professor KNAPP

Required, in the third year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION, AT THE VANDERBILT CLINIC, IN THE USE OF THE OPHTHALMOSCOPE—6 lessons for each student. Dr. MAY

Optional, in the third year, for candidates for the degree of M.D.

III—PRACTICAL INSTRUCTION, AT THE VANDERBILT CLINIC, IN THE REFRACTION AND MOTILITY OF THE EYE—6 lessons for each student. Dr. CLAIBORNE

Optional, in the third year, for candidates for the degree of M.D.

IV—HOSPITAL CLINICS IN THE DISEASES AND THE OPERATIVE SURGERY OF THE EYE AT THE NEW YORK OPHTHALMIC AND AURAL INSTITUTE, 44 and 46 East 12th Street. Sat. at 2:30 P.M. throughout the academic year. To these clinics the students are invited in sections. Professor KNAPP

Optional, in the third year, for candidates for the degree of M.D.

## Oriental Languages

RICHARD J. H. GOTTHEIL, Ph.D.....	<i>Professor</i>
A. V. WILLIAMS JACKSON, Ph.D.....	<i>Professor</i>
ABRAHAM VOIANNAN, A.M.....	<i>Lecturer</i>

Courses designated by an *a* are open to the public, men and women alike, on payment of an auditor's fee.

A special circular describing in detail the courses to be given and the facilities that are offered to students, is issued by the department and will be furnished upon application.

### General Statement

The department of Oriental Languages has charge of all the courses which deal with the Semitic and the Indo-Iranian languages and literatures. The courses are open to university students and a number of them also to juniors and seniors in the School of Arts.

Special attention is called to the fact that opportunities are given for the study of the modern dialects spoken in a part of the East. Instruction is offered in Armenian, Turkish, Persian, and Kurdish. Upon a sufficient demand being made, courses will be arranged in Modern Arabic and Modern Syriac.

By agreement between professors in the departments of Greek, Oriental Languages, Germanic Philology, and Romance Philology, a course in the Study of Language, consisting of lectures and exercises, will be offered two hours weekly in each year.

### SEMITIC LANGUAGES

Courses I, II, III, IV, X, XII, XIII, XV, XVI, XVII and XVIII are open to all university students; courses V, VI, VII, VIII, IX, XI, and XIV to advanced students only.

#### Courses in Hebrew

The course in Hebrew extends over three years. The first year is devoted to the study of the elements; the second to the study of the syntax and the acquiring of ease in translating from Hebrew into English and from English into Hebrew; the third to a critical study of one or more books of the Bible.

*a* I—BIBLICAL HEBREW, ELEMENTARY COURSE—2 hours. Professor GOTTHEIL

*a* II—BIBLICAL HEBREW, SECOND COURSE—Rapid reading of the Book of Samuel. 2 hours, first term. Professor GOTTHEIL

*a* III—BIBLICAL HEBREW, THIRD COURSE—Critical study of the Book of Jeremiah, with special reference to the ancient versions. 2 hours, second term. Professor GOTTHEIL

## Courses in Rabbinical Hebrew

a IV—INTERPRETATION OF SELECTED PORTIONS OF THE MISHNAH. 1 hour, first term. Professor GOTTHEIL

V—INTERPRETATION OF A TREATISE OF THE TALMUD, with an introduction into Talmudic Literature. 1 hour, second term. Professor GOTTHEIL

VI—INTERPRETATION OF SELECTED PORTIONS OF MAIMONIDES' *Guide of the Perplexed*, in connection with the Arabic text published by S. Munk, *Le Guide des Égarés* (Paris, 1856). Lectures will also be given on the history of Mediæval Hebrew Philosophy. 1 hour, second term. Professor GOTTHEIL

## Courses in Epigraphy

These courses are intended to cover the whole field of Semitic Epigraphy during a period of three years. For course VII a previous knowledge of Hebrew is required, for course VIII of Aramæan, and for course IX of Arabic.

a VII—INTERPRETATION OF THE PHœNICIAN INSCRIPTIONS, with an introduction to Semitic palæography and the history of the alphabet.

(Given in 1896-7).

a VIII—INTERPRETATION OF THE ARAMÆAN INSCRIPTIONS OF SINJIRLI (*Mittheilungen aus den Orientalischen Sammlungen*, Heft XI; Berlin, 1893), and of the *Corpus Inscriptiorum Semiticarum*, vol. ii.

(Given in 1897-8).

IX—INTERPRETATION OF THE SABÆAN AND HMYARITIC INSCRIPTIONS CONTAINED IN THE *Corpus Inscriptiorum Semiticarum*, vol. iv. 1 hour, second term. Professor GOTTHEIL

(Given in 1895-6).

## Courses in Assyrian

a X—ELEMENTARY COURSE—Study of the Syllabery, with readings from Abel and Winckler's *Keilschrifttexte zum Gebrauch bei Vorlesungen*, and the study of Delitzsch's *Assyrian Grammar*. 2 hours. Professor GOTTHEIL

(Given in 1895-6).

XI—ADVANCED COURSE—The Babylonian Accounts of the Creation and the Flood (Paul Haupt, *Das Babylonische Nimrodepos*; and Fr. Delitzsch, *Assyrische Lesestücke*, 3d ed.). Professor GOTTHEIL

(Given in 1896-7).

## Courses in Arabic

a XII—ELEMENTARY COURSE—Study of Socin's *Arabic Grammar*, with exercises in translating Arabic into English and English into Arabic. 2 hours, first term. Professor GOTTHEIL

a XIII—SECOND COURSE—Study of Brünnow's *Chrestomathie aus Arabischen Prosaschriftstellern* (Porta Ling. Orient., pars xvi; Berlin, 1895). 2 hours, second term. Professor GOTTHEIL

XIV—ADVANCED COURSE—Interpretation of an Arabic author. Professor GOTTHEIL

(Given in 1896-7).

### Courses in Syriac

aXV—ELEMENTARY COURSE—Study of Nöldeke's *Syrische Grammatik* and reading of Cureton's *Spicilegium Syriacum* (London, 1855).

(Given in 1896-7).

XVI—ADVANCED COURSE—Interpretation of Hoffmann's *Julianos der Abtrünnige* (Leyden, 1880) during the first term, and of the Palestinian Syriac Gospels (Lagarde, *Bibliotheca Syriaca*) during the second. 2 hours. Professor GOTTHEIL

### Course in Ethiopic

XVII—PRINCIPLES OF THE GRAMMAR, AND READING OF THE EXTRACTS IN PRÆTORIUS' *Athiopische Grammatik* (Porta Ling. Orient., pars vii; Karlsruhe, 1886). 1 hour, first term. Professor GOTTHEIL

### Semitic Seminar

XVIII—The seminar will take up the study of current questions in Semitic philology, with especial reference to modern methods of linguistic research.

Tu. evening at 8

Attendance at the seminar meetings will be obligatory upon candidates for the degrees of Master of Arts and Doctor of Philosophy.

### Course in Turkish

First Term: Principles of the Grammar in connection with the study of A. Müller's *Türkische Grammatik* (Porta Linguarum Orientalium, pars xi). Second term: Exercises in Turkish Conversation and in the reading of Turkish newspapers. 2 hours. Mr. YOHANNAN

## INDO-IRANIAN LANGUAGES

This department offers correlated courses in Sanskrit and Pāli, in the ancient and certain of the modern languages of Iran, and in the Modern Armenian branch of the Indo-Germanic family of languages. Some general lectures on the literature, antiquities, and history of the people will be given on Wednesday afternoons during the winter months. These lectures will be open to all university students, and upon certain conditions to auditors.

### Courses in Sanskrit and Pāli

Course I is open to all university students; courses II, III, and IV are open to advanced students only.

a I—SANSKRIT, ELEMENTARY COURSE—Grammar and reading of texts—2 hours. Professor JACKSON

a II—SANSKRIT, ADVANCED COURSE—Laws of Manu, with Kullūka's Commentary—2 hours, first term. Professor JACKSON

a III—SANSKRIT, ADVANCED COURSE—Introduction to the study of the Veda—2 hours, second term. Professor JACKSON

a IV—PĀLĪ, ELEMENTARY COURSE—1 hour. Professor JACKSON

### Courses in Iranian Languages

Courses I, III and IV are open to all university students ; courses II, V, VI, and VII to advanced students only.

I—AVESTAN, ELEMENTARY COURSE—Grammar and reading of texts—2 hours. Professor JACKSON

II—AVESTAN, ADVANCED COURSE—Interpretation of texts, antiquities, and literature. 2 hours. Professor JACKSON

III—OLD PERSIAN CUNEIFORM INSCRIPTIONS—I hour, first term. Professor JACKSON

IV—PAHLAVI, INTRODUCTORY COURSE—I hour, second term. Professor JACKSON

V—ZOROASTER AND HIS TEACHING—Lectures. 1 hour. Professor JACKSON

Given in 1896-7, and each alternate year thereafter.

VI—LECTURES ON COMPARATIVE IRANIAN GRAMMAR—I hour, second term. Professor JACKSON

Given in 1896-7, and each alternate year thereafter.

VII—MODERN PERSIAN, INTRODUCTORY COURSE—2 hours. Mr. YOHANNAN

### Course in Armenian

PRINCIPLES OF THE GRAMMAR WITH SELECTED READINGS—I hour, second term. Mr. YOHANNAN

### Course in the Study of Language

INTRODUCTION TO THE STUDY OF LANGUAGE—2 hours. Professors JACKSON and GOTTHEIL

This course is open to all university students and to juniors in Columbia College.

### Equipment

The Columbia College Library (215,000 volumes) contains most of the important periodicals which deal with Oriental research, and it has quite a rich collection of the publications of the learned societies of Europe—*e. g.*, of the Academies of Berlin, Vienna, Leipzig, St. Petersburg, Brussels, Paris, and Rome (Lincci).

The collection of books relating to East Indian and Iranian subjects already comprises the most important text-editions and works of reference, and additions are constantly being made. In Semitic philology most of the best works will be found on the shelves ; care has been taken especially in Assyriology to buy all the more important publications. The library possesses also the most complete collection of works in Rabbinical Hebrew that exists in this country, and it has a collection of old Babylonian clay tablets. In the Avery Architectural Library, moreover, most of the monumental works relating to Eastern art and archæology will be found. The collections, furthermore, of the University Library in different branches of Orientalia, are supplemented in a valuable way



by those of the Astor Library, where the privileges of an alcove-reader may be secured by the advanced student. The library of the Union Theological Seminary, which is likewise accessible to advanced students at Columbia College, contains all the current theological periodicals: and the University collections of casts and of tablets in the Metropolitan Museum of Art furnish material for those who wish to devote themselves especially to the study of Assyrian.

## Otology

ALBERT H. BUCK, M.D.....	<i>Clinical Professor</i>
WILLIAM COWEN, M.D.....	<i>Chief of Clinic</i>
ROBERT LEWIS, JR., M.D.....	<i>Clinical Assistant</i>
A. G. TERRELL, M.D.....	<i>Clinical Assistant</i>
MARCUS KENYON, M.D.....	<i>Clinical Assistant</i>

## Courses

I—PRACTICAL INSTRUCTION IN THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF THE EAR, AT THE VANDERBILT CLINIC—6 lessons for each student. Professor BUCK and Dr. COWEN

Optional, in the third year, for candidates for the degree of M.D.

## Department of Pathology

(Including Pathology, Normal Histology, Bacteriology, and Photomicrography.)

T. MITCHELL PRUDDEN, M.D.....	<i>Professor</i>
GEORGE C. FREEBORN, M.D.....	<i>Instructor in Normal Histology</i>
TIMOTHY MATLOCK CHEESMAN, M.D.....	<i>Instructor in Bacteriology</i>
IRA VAN GIESON, M.D.....	<i>Instructor in Normal Histology and</i> <i>Alonzo Clark Scholar</i>
EUGENE HODENPYL, M.D.....	<i>Instructor in Pathology</i>
JOHN SLADE ELY, M.D.....	<i>Assistant in Pathology and Curator</i> <i>of the Museum of Pathology</i>
JAMES EWING, M.D....	<i>Tutor in Normal Histology</i>
EDWIN M. KITCHEL, M.D.....	<i>Assistant in Normal Histology</i>
FREDERICK RANDOLPH BAILEY, M.D.....	<i>Assistant in Normal Histology</i>
VAN HORNE NORRIE, M.D.....	<i>Assistant in Pathology</i>
EDWARD LEAMING, M.D.....	<i>Instructor in Photography</i>
HARRISON G. DYAR, A.M., Ph.D.....	<i>Assistant in Bacteriology</i>
THEODORE C. JANEWAY, M.D.....	<i>Assistant in Bacteriology</i>
PHILIP HANSON HISS.....	<i>Alumni Association Fellow in Pathology</i>

## General Statement

For convenience of administration, and for the better association of allied themes, the laboratories of Pathology, Normal Histology, Bacteriology, and Photography are grouped together in the department of Pathology under the direction of the professor of Pathology.



### Courses in Pathology

I—PRACTICAL INSTRUCTION IN PATHOLOGICAL ANATOMY AND HISTOLOGY, AND IN BACTERIOLOGY AS APPLIED TO MEDICINE. Each student is given about one hundred sections or other permanent preparations, illustrating the more important and common lesions. These he mounts for the microscope, and studies, making notes and sketches. This collection of specimens he retains for future reference.

The systematic course opens with a study of the various phases of inflammation: tumors are next studied. The methods of staining, examining, and cultivating bacteria and other micro-organisms are then learned, and the student himself prepares, stains, and studies most of the more important pathogenic germs. The methods of preparation of diphtheria and other antitoxines are considered and illustrated. The remainder of the course is devoted to the systematic study of the lesions of the viscera. Each student is furnished with a microscope and the necessary instruments and reagents. Delafield and Prudden's Handbook of Pathological Anatomy and Histology is used as a text-book in this course. 6 hours, for one half of the academic year. Demonstrations of gross pathological specimens are made as the material is gathered, and the members of the class may attend the autopsies held at the Roosevelt, Bellevue, New York, and City Hospitals. Professor PRUDDEN and Drs. HODENPYL, ELY, CHEESMAN, and NORRIE

Required, in the third year, of candidates for the degree of M.D. in the three-years' course.

II—THE TECHNIQUE OF POST-MORTEM EXAMINATIONS—Practical instruction, including general methods of preserving specimens. 2 hours, one fourth of the year. Dr. HODENPYL

Required, in the second year, of candidates for the degree of M.D. in the *four-years'* course.

III—PATHOLOGICAL ANATOMY AND HISTOLOGY, EXPERIMENTAL PATHOLOGY, AND APPLIED BACTERIOLOGY—A limited number of graduates in medicine, or other advanced workers, is admitted to the special laboratories for the pursuit of advanced lines of study in these themes. Professor PRUDDEN, Drs. HODENPYL, CHEESMAN, FREEBORN, and VAN GIESON

### Courses in Normal Histology

I—PRACTICAL INSTRUCTION IN THE LARGE LABORATORY, on the upper floor of the north wing of the Medical School. Sections and other preparations of the simple tissues and the more important thoracic and abdominal viscera of the normal body are given to each student during the course. These he is required to mount and study under the microscope, making notes and drawings of the entire series of specimens. This collection he retains for future reference. Each student is supplied with a microscope and with a tray of instruments and reagents. Piersol's Text-book of Normal Histology is used in this course. 6 hours, one half of the year. Drs. FREEBORN, VAN GIESON, EWING, KITCHEL, and BAILEY

Required, in the first year, of candidates for the degree of M.D. in the *four-years'* course.

Elective for seniors in the School of Arts.

II—PRACTICAL INSTRUCTION SIMILAR IN CHARACTER AND METHOD TO THAT UNDER I, but embracing as special themes the central nervous system, the skin, and the organs of special sense. 4 hours, one half of the year. Drs. FREEBORN, VAN GIESON, EWING, KITCHEL, BAILEY, and STRONG

Required, in the second year, of candidates for the degree of M.D. *in the four-years' course.*

III—PRACTICAL INSTRUCTION IN MICROSCOPIC TECHNOLOGY AND ADVANCED NORMAL HISTOLOGY is given in the special laboratories to a limited number of graduates in medicine, or other qualified workers. Drs. FREEBORN and VAN GIESON

### Courses in Bacteriology

For required instruction for medical students in bacteriology as applied to medicine, *in three-years' course*, see Pathology I.

For optional instruction in the same for advanced workers, see Pathology III.

I—PRACTICAL INSTRUCTION IN BACTERIOLOGY is given in the large laboratory on the upper floor of the new north side extension of the college building. This course opens with the study of the relationship of bacteria to other micro-organisms. It embraces the methods of staining, examining, and cultivating. The student is taught by practical exercises the methods of separating one species of bacteria from another, and the series of biological characters used in identification of the various forms. The general relationship of certain micro-organisms to disease is considered and illustrated. Finally some of the hygienic aspects of bacteriology are studied by experiments in the sterilization of infectious materials, disinfection of the hands, and by practice in biological air, water, milk, and soil analysis. 6 hours, one quarter of the year. Drs. CHEESMAN, DYAR, and JANEWAY.

Required, in second year, of candidates for the degree of M.D. *in the four-years' course.*

II—SPECIAL LABORATORY COURSE—There is an opportunity each year for a few graduates in medicine, or other qualified workers, to receive a special course in practical bacteriology. The laboratory is abundantly supplied with apparatus for the culture and study of micro-organisms, and has under cultivation a large collection of identified species.

Methods of preparation, staining, microscopic study, and measurement of bacteria. Preparation of culture media; study and record of observation, of selected typical species; systematic analyses for determination of unknown species; methods of isolation of species; qualitative and quantitative biological examinations of water, soil, and air; methods of determining pathogenic properties, disinfection, modes of testing value of germicides.

This course requires attendance at the laboratory during the entire day for from 6 to 8 weeks.

Text-books: Abbott's Principles of Bacteriology, 2d edition; Sternberg's Bacteriology. Dr. CHEESMAN

Minor for the degree of A.M. or of Ph.D.

III—LABORATORY COURSE—As under Course II, with additional study and determination of known species of bacteria; special study of the chemical pro-

ducts formed in the growth of bacteria, practical work in photomicrography, and the pursuit of some selected theme for original investigation. Professor PRUDEN and Drs. CHEESMAN and LEAMING

Major for the degree of A.M. or of Ph.D.

### Research

Research in *Pathology* and *Bacteriology* may be pursued in the laboratories of this department by a limited number of graduate students or practitioners of medicine, or other advanced workers under the direction of the professor. To such men the large collection of pathological specimens preserved for microscopical study, and the collection of bacterial cultures belonging to this department are accessible. Professor PRUDEN

### Photography

PRACTICAL INSTRUCTION IN PHOTOMICROGRAPHY—This course given in the photographic laboratories includes methods of preparation of specimens of animal tissues and micro-organisms for photomicrographic purposes; the use of various forms of lenses, cameras, and plates; the details of printing, the making of lantern slides, and the use of projection lanterns. Dr. LEAMING

Facilities for gross photography of cases or of specimens, and for photomicrography in recording the results of special forms of research, are available through Dr. Leaming to workers in this and other departments of the University.

### Fellowships

For University and Alumni Association Fellowships, open to persons wishing to do special work under the Professor of Pathology, see pages 21 and 27.

### Museum

The museum of pathology is made use of in the work of this department, both for the instruction of medical students, and as a place of deposit for specimens showing new or rare forms of lesions.

### Equipment

The department of Pathology occupied in the autumn of 1895 the large additional space which the new college buildings furnish. The large class room on the fifth floor of the north wing is used as formerly for the classes in Normal Histology and in Pathology. The fourth floor of the same wing is devoted to the pathological museum, to a large preparation laboratory, a workshop, and cold storage.

The new space, consisting of two floors over the new extension of the Vanderbilt Clinic, is devoted to a large general laboratory for classes in Bacteriology and in Clinical Microscopy, to private rooms for instructors, and for advanced work and research in pathology and bacteriology.

The new laboratories are amply lighted, fully furnished, and equipped with such new apparatus as the rapidly growing sciences of pathology and bacteriology require.

## Philosophy, Psychology, and Education

NICHOLAS MURRAY BUTLER, Ph.D.....	<i>Professor</i>
JAMES MCKEEN CATTELL, Ph.D.....	<i>Professor</i>
JAMES HERVEY HYSLOP, Ph.D.....	<i>Professor</i>
LIVINGSTON FARRAND, A.M., M.D.....	<i>Instructor</i>
NORMAN WILDE, Ph.D.....	<i>Assistant</i>
WALTER LOWRIE HERVEY, Ph.D.....	<i>Professor in Teachers College</i>
JOHN FRANCIS WOODHULL, A.B.....	<i>Professor in Teachers College</i>
CHARLES ALPHEUS BENNETT, B.S.....	<i>Professor in Teachers College</i>
JOHN FRANKLIN REIGART, A.B.....	<i>Professor in Teachers College</i>
CLARENCE EDMUND MELENEY, A.M.....	<i>Professor in Teachers College</i>
FRANK THOMAS BAKER, A.M.....	<i>Professor in Teachers College</i>

### General Statement

The courses of this department fall into three divisions : those on philosophy, those on psychology, and those on education. In each division are courses best described as introductory, the aim of which is to furnish a general acquaintance with the main subdivisions of philosophy and education as a whole. The courses known as Philosophy A, I and II ; Psychology I and II ; and Education I and II, are of this character. By the use of the historical and comparative methods of study and exposition, students in these courses are introduced to a general survey of their respective subjects.

Philosophy A is required of all members of the junior class in the School of Arts. Philosophy I and II, Psychology I, IV, VI, and VII, and Education I and II are open to seniors in the School of Arts and other candidates for the degree of A.B.

The remaining courses in each division are intended primarily for advanced students. The advanced courses are planned with reference to each other, and a student remaining three years in the department may hear courses that cover the entire range of modern philosophy.

All the courses offered by this department, except Philosophy A and Psychology V, are open to women on the same terms as to men. Women wishing to enter any of the courses as special students or as candidates for a degree must register through Barnard College.

### Courses in Philosophy

A—PSYCHOLOGY AND LOGIC—Baldwin's Elements of Psychology, James's Psychology, Hyslop's Elements of Logic. 1 hour. Lectures, practical exercises, and recitations. Professor HYSLOP and Dr. WILDE

Course A may not be counted toward the degree of Master of Arts or Doctor of Philosophy.

I—GENERAL HISTORY OF PHILOSOPHY—Zeller's Outlines of Greek Philosophy, Falckenberg's History of Modern Philosophy, and Windelband's History of Philosophy. 2 hours. Lectures, essays, and private reading. Professor BUTLER and Dr. WILDE

II—ETHICS, INTRODUCTORY COURSE—Hyslop's Elements of Ethics. 2 hours. Lectures, essays, and discussions. Professor HYSLOP and Dr. WILDE

III—THE PHILOSOPHY OF KANT AND HIS SUCCESSORS—Fichte, Schelling, Hegel, Herbart, and Schopenhauer. 2 hours. Lectures, essays, and private reading. Professor BUTLER

Given in 1895-6, and each alternate year thereafter.

IV—BRITISH PHILOSOPHY FROM LOCKE TO HERBERT SPENCER—History and criticism of the association psychology and philosophy of evolution. Locke's Essay on the Human Understanding, Berkeley's Principles of Human Knowledge, Hume's Treatise on Human Nature; the writings of Hartley, Brown, the Mills, and Bain; Herbert Spencer's First Principles. 2 hours. Lectures, essays, and private reading. Professor BUTLER

Given in 1895-6, and each alternate year thereafter.

V—PRACTICAL ETHICS—2 hours. Lectures, private reading, observation, essays, and discussions. Professor HYSLOP

Given in 1895-6, and each alternate year thereafter.

VI—SYSTEMATIC ETHICS—2 hours. Lectures, discussions, and essays. Dr. HYSLOP

Given in 1896-7, and each alternate year thereafter.

VII—PHILOSOPHICAL SEMINAR—Professor BUTLER

VIII—ETHICAL SEMINAR. Professor HYSLOP

### Courses in Psychology

I—PHYSIOLOGICAL PSYCHOLOGY, INTRODUCTORY COURSE—3 hours. Lectures and laboratory work. Dr. FARRAND

II—PHYSIOLOGICAL PSYCHOLOGY, ADVANCED COURSE—Lectures and laboratory work. Dr. FARRAND

III—ABNORMAL AND PATHOLOGICAL PSYCHOLOGY—1 hour. Lectures, essays, and discussions. Dr. FARRAND

IV—ANTHROPOLOGY—Lectures, essays, and private reading. 2 hours. Dr. FARRAND

VI—EXPERIMENTAL PSYCHOLOGY, INTRODUCTORY COURSE—2 hours. Lectures, themes, and laboratory work. Professor CATTELL

VII—EXPERIMENTAL PSYCHOLOGY—Additional work in connection with course VI. 2 hours. Professor CATTELL

VIII—MEMORY, IMAGERY, ASSOCIATION, AND ATTENTION—2 hours. Lectures, laboratory work, and reports. Professor CATTELL

IX—RESEARCH WORK IN EXPERIMENTAL PSYCHOLOGY—Daily. Professor CATTELL

For additional courses recommended to students of psychology, see Neurology I

### Courses in Education

I—HISTORY OF EDUCATIONAL THEORIES AND INSTITUTIONS: Aristotle and the ancient educational ideals, Alcuin and the rise of the Christian schools, Abelard and the foundation of the universities, Loyola and the educational system of the Jesuits; the educational reformers, Rousseau, Pestalozzi, and



Froebel ; Herbart and philosophical study of education—I hour. Conferences, occasional lectures, essays, and private reading. Professor BUTLER

II—PRINCIPLES OF EDUCATION : psychology of childhood, didactics, the ethical and religious element in education—I hour. Conferences, occasional lectures, essays, and private reading. Professor BUTLER

This course requires also two hours per week (counting as one hour) to be spent in observation and practice-teaching at the Teachers College.

III—EDUCATIONAL SEMINAR—I hour. Professor BUTLER

*The following courses are given at Teachers College, Morningside Heights, 120th Street, West :*

IV—PSYCHOLOGY AND GENERAL METHOD—Observation in Horace Mann School, criticism and preparation of typical lessons, lectures, reports, and private reading. 2 hours. Professor REIGART

V—METHODS OF TEACHING IN ELEMENTARY SCHOOLS—Lectures, observation, and practical exercises.  $1\frac{1}{2}$  hours. Professor MELENEY

VII—INSTITUTES OF EDUCATION—Laurie's Institutes of Education, Rosenkranz's Philosophy of Education, Herbart's Science of Education, Rein's Outlines of Pedagogics—I hour. Lectures, essays, and private reading. Professor HERVEY

VIII—METHODS OF TEACHING ENGLISH IN SECONDARY SCHOOLS—Study of typical forms of literature ; methods of teaching ; observation and practice. 2 hours first term. Professor BAKER

See also Rhetoric III.

IX—METHODS OF TEACHING FOR SECONDARY SCHOOLS—History, Latin, and Greek, mathematics—Lectures, observations of typical lessons, criticism, reports, and private reading. 2 hours. Professors HERVEY and REIGART

X—METHODS OF TEACHING SCIENCE IN ELEMENTARY AND SECONDARY SCHOOLS—Lectures, essays, and practical exercises. 3 hours. Professor WOODHULL

XI—MANUAL TRAINING IN ELEMENTARY AND SECONDARY SCHOOLS—History and principles ; courses, equipments, and methods of teaching. Lectures, essays, and practical exercises. 2 hours, first term. If accompanied with practice, 4 to 6 hours the entire year. Professor BENNETT

XIII—METHODS OF TEACHING FRENCH AND GERMAN

Not given in 1895-6. See French XIII.

XIV—READING AND DISCUSSION OF GERMAN AND FRENCH WORKS ON EDUCATION IN THE ORIGINAL TEXT—Lectures, essays, and discussions. 2 hours.

Not given in 1895-6.

XVI—SCHOOL SUPERVISION—Lectures, reports, and practical exercises. 3 hours. Professor MELENEY

### Equipment

The equipment of the department is very complete and constantly being added to. It includes library facilities, laboratories of experimental and physiological psychology, the Horace Mann School for observation and practice, and the beginnings of an educational museum.



Every journal of importance, American and foreign, dealing with philosophy, psychology, ethics, or education, is taken regularly by the University library. Any book needed by an advanced student can usually be bought at once.

Students of Education have also at their disposal the Bryson Library at Teachers College, W. 120th St., Morningside Heights. The collection now numbers more than 5000 volumes, and is constantly being added to. The main purpose of the library is to afford special students of Education opportunities for study and research.

The psychological laboratory is situated on the fourth floor of the building known as the President's House, and consists of a lecture-room and general laboratory and three smaller rooms for special research, including a dark room for work on vision. The small rooms allow students to work alone and without interruption at all hours during the day. The laboratory has windows to the north, east, south, and west, and is supplied with electric light for experimental purposes and electric power.

The collection of psychological apparatus is, perhaps, not surpassed by any in this country or in Europe. Four thousand five hundred dollars have recently been appropriated for this collection by the Trustees of the University, and, in addition, apparatus which cost \$1200 is in use. The apparatus has been secured with a view to a series of experiments, such as is carried out by the students attending the introductory course, and with a view to special researches.

The exceptionally fine collection of apparatus belonging to the department of Physiology is also available for the use of students in this department.

For students of Education an opportunity for observation and practice in teaching is afforded that is quite unique either in this country or Europe. This is given in the school of observation and practice known as the Horace Mann School, which is maintained by Teachers College for this purpose. In this school every phase of school work, including the high school as well as the kindergarten and the elementary school, is to be found in operation. Opportunities for practice in teaching and supervision are afforded to qualified students.

## Photography

(See page 113)

## Physics

OGDEN N. ROOD, A.M.	Professor
WILLIAM HALLOCK, A.B., Ph.D.	Adjunct Professor
*HOLBROOK CUSHMAN, A.B.	Instructor
REGINALD GORDON, A.B.	Tutor
HERSCHEL C. PARKER, Ph.B.	Tutor
ASA S. IGLEHART, A.B.	Assistant
CHARLES C. TROWBRIDGE, B.S.	Assistant
HENRY S. CURTIS, A.B.	Assistant
HERBERT T. WADE, A.B.	Assistant
HALBERT P. GILLETTE, M.E.	Assistant
HENRY E. KEYS, Ph.D.	Assistant <i>pro tem</i>

\* Deceased, Oct. 26, 1895.

### Courses

**I—GENERAL PHYSICS**—Sound and Heat (first term). Light and Electricity (second term). 3 hours lectures and recitations. Professor ROOD and Mr. GORDON

Required of all first-year students in the School of Mines, except those in the course of Architecture. Open to seniors, School of Arts.

**II—SOUND (first term)—MAGNETISM AND ELECTRICITY (second term)**—2 hours lectures, 2 or 6 hours laboratory work. Text-books: Atkinson's *Ganot* and Stewart and Gee's *Physics*. Professor ROOD

Open to juniors and seniors, School of Arts, and to candidates for the degree of A.M. whose minor subject is Physics.

**III—ELECTRICITY (first term)**—Lectures on absolute system of mechanical and electrical units; electrical measurements; the derivation and use of the Ampere, Volt, Ohm, Watt and Joule.

**EXACT ELECTRICAL MEASUREMENTS (second term)**—Lectures on the Farad, Coulomb, and units of electric and magnetic induction; electrical and magnetic measurements in the laboratory. 2 hours lectures, 8 hours laboratory. Text-books: Everett's, C. G. S., *System of Units*, Glazebrook and Shaw's *Physics*, Kohlrausch's *Physical Measurements*, Widemann and Eberts' *Physics*, and A. Witz's *Physics*. Professor HALLOCK

Required of second-year students in the Electrical Engineering course. Second-year students in all courses in the School of Mines except Architecture are required to attend the lectures of the first term, and to take 2 hours of laboratory work during both terms. Open to seniors, School of Arts, and to candidates for the degree of A.M. whose minor subject is Physics. Pre-requisite: I or II with 2 hours laboratory work.

**IV—LIGHT (first term)**—Lectures on the velocity, reflection, refraction, and dispersion of light. Achromatism, optical instruments, the eye, and Young's theory of color. Physical measurements in the laboratory.

**HEAT (second term)**—Lectures on the expansion of solids, liquids, and gases; on conduction, specific heat, tension of vapors, and radiant heat. Physical measurements in the laboratory. 3 hours lectures, 2 or 4 hours laboratory. Text-books: Stewart and Gee, and Glazebrook and Shaw's *Physics*. Professor ROOD

Open to seniors, School of Arts, and to candidates for the degree of A.M. whose minor subject is Physics.

**V—MODES OF CONSTRUCTING AND DESIGNING APPARATUS (first term)—I hour.** Professor HALLOCK

Open to juniors, seniors, School of Arts, to second-year students School of Mines and to university students. Pre-requisite or parallel: course II, III, or IV.

**VI—THE STEAM ENGINE (second term)—I hour.** Mr. GORDON

Open to juniors and seniors, School of Arts. Pre-requisite or parallel: course II or IV.

**VII—ELECTRICAL MANIPULATION (first term)—I hour.** THEORETICAL COMPARISON OF ELECTRICAL METHODS (second term)—2 hours. Mr. PARKER

Open to candidates for the degree of Electrical Engineer, to seniors and university students. Pre-requisite or parallel: III or IV.

**VIII—UNDULATORY THEORY OF LIGHT (second term)—2 hours lectures.** Professor HALLOCK

Open to seniors and university students. Pre-requisite or parallel: course IV of 7 hours.

### Laboratory Courses

IX—ELECTROMOTIVE FORCE OF STANDARD AND CONSTANT CELLS.

X—STUDY OF STRENGTH OF ELECTRIC CURRENTS.

XI—STUDY OF ELASTICITY OF SOLID BODIES.

XII—COLORIMETRY AND ABSORPTION SPECTRA.

XIII—PHOTOMETRY.

Open, with 5 hours laboratory work, to candidates for the degree of A.M., or, with 8 hours laboratory work, to candidates for the degree of Ph.D., whose minor subject is Physics. Pre-requisite: course II of 4 hours.

XIV—CALIBRATION OF WHEATSTONE BRIDGES.

XV—HYPSOMETRY.

XVI—DETERMINATION OF INDEX OF REFRACTION BY SPECIAL METHODS.

XVII—QUANTITATIVE EXAMINATION OF THE DISCHARGE OF THE INDUCTION COIL.

XVIII—VISCOSITY OF SOLIDS.

Open to candidates for the degree of A.M., or, with 10 hours laboratory work, to candidates for the degree of Ph.D., in their first year, whose major subject is Physics. Pre-requisite: courses II and IV of 8 and 7 hours.

XIX—GALVANOMETER CONSTRUCTION FOR MAXIMUM EFFICIENCY.

XX—ADVANCED COURSE IN SPECTROMETRY.

XXI—BALLISTIC-GALVANOMETER WORK, INDUCTANCE.

XXII—CALORIMETRY.

XXIII—RADIANT HEAT.

XXIV—INTERFERENCE OF LIGHT.

XXV—POLARIZED LIGHT.

XXVI—ACOUSTIC MEASUREMENTS.

XXVII—THERMO-ELECTRICITY.

XXVIII—MEASUREMENT OF LOW RESISTANCE.

XXIX—ELECTRICAL INSULATION.

Professors ROOD and HALLOCK, Mr. GORDON, and Mr. PARKER

Open, with 10 hours laboratory work, to candidates for the degree of Ph.D., in their first year, whose major subject is Physics. Pre-requisite: courses II and IV of 8 and 7 hours.

Original research, conducted under the direction of Professors Rood and Hallock, is open to candidates for the degree of Ph.D., in their second year, whose major subject is Physics.

### Equipment

The physical laboratory consists of six rooms devoted to physical measurements; some are arranged and used for optical and electrical purposes, others for special researches. The laboratory throughout is supplied with the street current of the Edison incandescent system, and all the ordinary conveniences. Among the pieces of apparatus the following may be specially mentioned:

For measurements of length there are three linear and three circular dividing engines of various designs ; a Geneva Society comparator, and dividing engine ; a Grunow cathetometer, spherometers, an optical lever, and micrometers of many kinds. For measurements of mass there are provided eight balances with weights, specific-gravity apparatus, hydrometers, areometers, Westfall and Jolly balances, and the various forms of vapor-density apparatus.

Standard mercurial barometers, aneroid and Mariotti barometers, Kater's and Borda's pendulums, and apparatus for studying elasticity are provided.

Also a monochord, Quincke's apparatus, Kundt's dust-figure apparatus and sets of organ pipes and tuning-forks for the study of sound.

Thermometers and apparatus for their calibration, and zero and boiling points, are supplied ; there is also apparatus for determination of coefficients of expansion, for latent and specific heat, and calorimetry.

The optical rooms are furnished with eight spectrometers of different designs, small telescopes, opera-glasses, eight compound microscopes, sets of lenses, prisms, and gratings, two goniometers, sextant, optical benches, photometers, saccharimeters, total reflectometers, and apparatus for colorimetry, polarized light, and spectroscopy.

In the rooms devoted to electricity are nine galvanometers of various patterns, high and low resistance, ballistic and dampened ; electrometers, magnetometers, rheostats and bridges of all types ; condensers, batteries, keys, arc and incandescent lamps, ammeters and voltmeters, and four standard ohms.

The workshop is furnished with a lathe, planer, grinding head, vises, carpenters' and machinists' bench, and tools for work in metal, wood, and glass.

Advanced students are taught and encouraged to repair, alter, and construct apparatus needed for their special work.

## Physiology

JOHN GREEN CURTIS, M.D. .... *Professor*  
 FREDERIC SCHILLER LEE, Ph.D. .... *Adjunct Professor and Demonstrator*  
 RICHARD HOOP CUNNINGHAM, M.D. .... *Assistant Demonstrator and Alumni Association Fellow*

## Courses

I—GENERAL PHYSIOLOGY—Structure of protoplasm ; physiology of the cell ; physiological division of labor and evolution of special functions ; irritability ; contractility ; heliotropism ; geotropism ; chemotropism ; general principles of secretion ; the nerve cell ; the nerve impulse ; reflex action ; the germ cells. Lectures, 1 hour. Professor LEE

Open to qualified candidates for the degree of M.D.

Open as elective to seniors who have had at least one year of General Biology, and, in conjunction with course III, to such seniors and to qualified candidates for the degree of A.M. or of Ph.D.

II—THE PHYSIOLOGY OF MAN AS RELATED TO THAT OF OTHER MAMMALS AND OF LOWER VERTEBRATES—Lectures and demonstrations, 4 to 6 hours. This course treats of different portions of its subject in alternate years, certain

introductory lectures only being repeated annually. Professors CURTIS and LEE and Dr. CUNNINGHAM

Required, in the first and second years, of candidates for the degree of M.D.

Open as an elective to seniors in the School of Arts, and, in conjunction with course IV, to qualified candidates for the degree of A.M., or of Ph.D.

III—LABORATORY COURSE IN GENERAL PHYSIOLOGY—5 hours. Professor LEE

Open to qualified candidates for the degree of M.D., and, in conjunction with Course I, to seniors who have had at least one year of General Biology, and to qualified candidates for the degree of A.M. or of Ph.D.

IV—LABORATORY COURSES—Personal instruction, private reading, practical work, and research. No definite number of hours. Professors CURTIS and LEE and Dr. CUNNINGHAM

Open to qualified candidates for the degree of M.D., and to qualified candidates for the degree of A.M. or of Ph.D.

### Research

V—THE LABORATORY is open for research, under the direction of its officers, to advanced workers. Professors CURTIS and LEE and Dr. CUNNINGHAM

### Fellowships

For the Alumni Association Fellowships open to persons desiring to do special work in the department of Physiology and for the University Fellowships, also open as above, see pages 27 and 21.

### Marine Laboratory

An investigator's room at the Marine Biological Laboratory at Wood's Holl, Mass., has been provided by the University for the use of the department of Physiology.

This renders possible, during the summer, researches upon the physiology of the marine fauna.

### Equipment

The Department of Physiology possesses :

(1) The main laboratory, for research and the preparing of demonstrations, covering 1769 square feet and lighted on three sides.

(2) Two rooms for optical or psychological work or for photography, communicating with the main laboratory and with one another. One of these has a free southerly exposure for the heliostat.

(3) The Swift Physiological Cabinet, for the accommodation of a specially endowed and very full collection of apparatus of precision, mainly for research.

(4) Two smaller laboratories, for the officers of the department and for practical classes.

(5) Easy access to a large lecture-room, specially fitted for experimental teaching ; and to demonstration-rooms for small classes.



The physiological journals in English, German, and French are accessible at the laboratory to advanced students; also the most important monographs and other books both modern and ancient.

A skilled mechanic is employed to devote his entire working time, at the laboratory, to the care and improvement of the plant, including the making, altering, and repairing of special apparatus. He also assists in the scientific manipulations.

The following machines and apparatus deserve mention :

An upright seven-horse-power steam-engine, mounted against a pier upon an iron bracket, to avoid floor-vibrations, and working a shaft which runs the whole length of the main laboratory; two steam lathes; apparatus worked by steam for artificial respiration; Ludwig's "Schlagwähler"; kymograph for a long roll of paper, and high-speed drum kymograph, both worked by steam; high-speed drum kymograph worked by weights; two drum kymographs of the spring pattern; four high-speed drum kymographs, worked by an electric motor; two single drums, to be revolved by hand; four "Basel stands" for the fine adjustment of recording levers; Zeiss scales and other instruments for reading and measuring curves, including a planimeter; electro-magnetic chronographs and control hammer; seconds pendulum; interrupter clock; automatic dry-contact tuning-forks; short-beam quantitative balance; copper voltameter; milliampère and ampère-meters; Wiedemann-du-Bois galvanometer, with coils of high and low resistance; Haüy's bar, telescope, and milk-glass scale; capillary electro-meters; ohmmeter, for resistances of from 0.001 to 200,000 ohms; Edelmann's faradimeter; nine horizontal and two upright duBois induction coils; a complete collection of duBois-Reymond's other apparatus; moist chambers and muscle levers; upright rheochord; mechanical tetanomotor; differential rheotome; Marey's tambours; cardiographs, stethograph, and explorer of the human muscles; sphymographs; plethysmograph; two single and one double recording mercurial manometers; spring manometers; tonographs; "stromuhr"; frog-heart apparatus; thermo-electric apparatus; constant-pressure injection apparatus; two mercurial gas pumps; large spectroscope; direct vision spectroscope; Ladd spectroscope; four micro-spectroscopes; heliostat; twelve microscopes and accessories; Thoma's microtome; Anschütz's "Schnellseher"; numerous instruments and models for the investigation and demonstration of the physiology of sight and hearing; casts and models of the brain; Dalton's apparatus for making sections of the human brain.

### Political Economy and Finance

(See page 57)

### Political Philosophy

(See page 82)

### Portuguese and Rumanian

(See page 128)



## Practice of Medicine

FRANCIS DELAFIELD, M.D., LL.D.....	<i>Professor</i>
WILLIAM H. DRAPER, M.D.....	<i>Professor of Clinical Medicine</i>
JAMES WEST ROOSEVELT, M.D.....	<i>Clinical Lecturer</i>
WALTER B. JAMES, M.D.....	<i>Clinical Lecturer</i>
FRANK W. JACKSON, M.D.....	<i>Chief of Clinic and Instructor in Physical Diagnosis</i>
GEORGE ROE LOCKWOOD, M.D.....	<i>Clinical Assistant and Instructor in Physical Diagnosis</i>
WILLIAM K. DRAPER, M.D.....	<i>Clinical Assistant</i>
VAN HORNE NORRIE, M.D.....	<i>Clinical Assistant</i>
ANGIER B. HOBBS, M.D.....	<i>Clinical Assistant</i>

## Courses

I—THE PRACTICE OF MEDICINE—Didactic lectures. 2 hours for five months, and 3 hours for three months. Professor DELAFIELD

Required, in the second and third years, of candidates for the degree of M.D.

II—CLINICAL LECTURES ON GENERAL MEDICINE AT THE VANDERBILT CLINIC—I hour. Th. at 3 P.M. Professor DELAFIELD

Required, in the second year, of candidates for the degree of M.D.

III—PHYSICAL DIAGNOSIS—Practical instruction; twenty-one lessons for each student. Drs. JACKSON and LOCKWOOD

Required, in the second year, of candidates for the degree of M.D.

IV—HOSPITAL CLINICS IN GENERAL MEDICINE—Roosevelt Hospital. M. at 4 P.M., throughout the academic year. Professors DELAFIELD and DRAPER and Dr. ROOSEVELT

New York Hospital. M. and Th., at 2.30 P.M., in November, December, January, February, and March. Professors DRAPER and PEABODY. (See "Materia Medica and Therapeutics.")

Bellevue Hospital. Tu. at 1.30 P.M., throughout the year. Drs. ROOSEVELT and JAMES, and Professor JACOBI. (See "Children, Diseases of.")

Attendance at hospital clinics is optional in the second and third years for candidates for the degree of M.D.

## Provençal

(See page 127)

## Psychology

(See page 115)

## Public Law and Jurisprudence

(See page 87)

## Rhetoric and English Composition

(See page 71)

## Romance Languages and Literatures

ADOLPHE COHN, LL.B., A.M.....	Professor
HENRY ALFRED TODD, Ph.D.....	Professor of Romance Philology
CARLO LEONARDO SPERANZA, LL.B., A.M.....	Instructor
BENJAMIN DURYEA WOODWARD, Ph.D.....	Instructor
LOUIS MARIE AUGUSTE LOISEAUX, S.B.....	Tutor
CURTIS HIDDEN PAGE, Ph.D.....	Lecturer

### General Statement

The department of the Romance Languages and Literatures has charge of all the courses of instruction and research, both in the School of Arts and in the School of Philosophy, dealing with the various languages that sprang from Latin after the unity of the Roman Empire was destroyed by the Germanic invasions of the fourth and fifth centuries after Christ. Chief among these languages are French, Italian, and Spanish, but several other idioms, of great philological and literary interest, some of them, like Portuguese and Rumanian, spoken in our own day by nations the importance of which is rather increasing than decreasing, are also included in the family.

The Department offers: (1st) to students in the School of Arts, practical instruction in French, Italian, and Spanish, courses in French, Italian and Spanish literature, and elementary instruction in Romance philology; (2d) to students in the School of Philosophy, advanced instruction in literature and in Romance Philology, courses in some of the languages unprovided for in the School of Arts, such as Provençal, and also instruction of a pedagogical character. One of the objects of the department is to offer at least one course in every one of the languages of the Romance group.

Although no course in philology proper is offered to the members of lower classes in the School of Arts, it should be stated that from the very start care is taken that as far as possible the students be put in possession of the historical sequences that justify the present state of the languages of the group, so as to furnish a solid foundation for grammatical knowledge and to awaken, in some students at least, a taste for philological research.

The courses offered by the department are grouped under the following headings: French, Provençal, Italian, Spanish, Portuguese, and Rumanian, Romance Philology.

Courses VII and VIII in French, are given by Professor Brander Matthews of the Department of Literature.

### Courses in French

ELEMENTARY COURSE—Books: Chardenal, First French course; Super, *Preparatory French Reader*; Labiche, *Le Voyage de M. Perrichon*; About, *La Mère de la Marquise*.

3 hours, first term. Dr. WOODWARD

Intended for students who have not studied French before entering college, and who are willing to work hard enough to be able to join course A at the beginning of the second term. Cannot be counted for a degree.

A.—GRAMMAR, READING, COMPOSITION—Books: Edgren, *French Grammar*; Storr, *French Syntax*; Sand, *La Mare au diable*; Balzac, *Contes*, edited by Harper and Livengood; Thiers, *L'Expédition d'Égypte*; Chateaubriand, *Extraits*; Augier et Sandeau, *Le Gendre de M. Poirier*; Ponsard, *L'Honneur et l'argent*; Molière, *Le Bourgeois gentilhomme*.

Outside Reading: George Sand, *Nanon*.

3 hours. Mr. LOISEAUX and Dr. PAGE

Prescribed for freshmen who do not take German A or its equivalent.

B.—GENERAL INTRODUCTION TO THE STUDY OF FRENCH LITERATURE. COMPOSITION—Books: Corneille, *Polyeucte*; Racine, *Phèdre*; Molière, *Le Misanthrope*; La Fontaine, *Fables choisies*; Bossuet, *Oraisons funèbres*; *Extraits d'auteurs du XVIIIe siècle*; Marivaux, *Le Legs*; Voltaire, *Brutus*; Beaumarchais, *Le Mariage de Figaro*; Bowen, *Modern French Lyrics*; Victor Hugo, *Hernani*; Pailleron, *Le Monde où l'on s'ennuie*; Sainte-Beuve, *Extraits des Causeries du lundi*; Gazier, *Petite histoire de la littérature française*.

Outside reading, first term: Voltaire, *Le Siècle de Louis XIV*; second term, any one of the following: Mme. de Staël, *Corinne*; Victor Hugo, *Quatrevingt-treize*; A. de Vigny, *Cinq-Mars*.

3 hours. Drs. WOODWARD and PAGE

Prescribed for sophomores who have taken French A in the freshman year, unless Chemistry I is substituted in its place.

I.—FRENCH RHETORIC—Books: Larive et Fleury, *Troisième année de grammairie*; Leune, *Difficult Modern French*; La Fontaine, *Fables*; C. Delavigne, *Louis XI*.

Outside reading: J. Reinach, *L'Eloquence française depuis la révolution jusqu'à nos jours*; Renan, *Pages choisies*.

3 hours. Mr. LOISEAUX and Dr. PAGE.

Open to students who have taken course B or its equivalent.

II.—HISTORY OF FRENCH LITERATURE IN THE 17TH CENTURY—Lectures, essays, and outside reading. Books: Descartes, *Discours de la Méthode*; Pascal, *Les Provinciales* (letters 1, 4, 13, édition Brunetière, Paris, Hachette); Corneille, *Théâtre choisi*; Molière, *Œuvres complètes*; Racine, *Œuvres complètes*; Boileau, *l'Art poétique*; Bossuet, *Oraisons funèbres*; La Rochefoucauld, *Maximes*; La Bruyère, *Les Caractères*; Lanson, *Histoire de la littérature française*.

Collateral reading: Rambaud's *Histoire de la civilisation française*.

3 hours. Professor COHN

Open to students who have taken course B or its equivalent.

III.—HISTORY OF FRENCH LITERATURE IN THE 18TH CENTURY; VOLTAIRE—Lectures, essays, and outside reading. Books: Condorcet, *Vie de Voltaire*; Lanson, *Histoire de la littérature française*; Morley, *Voltaire*; Voltaire, *Théâtre choisi* (including *Zaïre*, *Mérope*, *Brutus*, *Mahomet*, *Tancrède*); Zadig; *Traité de la tolérance*.

Outside reading: Voltaire, *Lettres philosophiques*; *Dictionnaire philosophique* (extracts); *Correspondance* (extracts)

Collateral reading: Rambaud, *Histoire de la civilisation française*. 3 hours. Professor COHN

Open to students who have taken course II or its equivalent.

IV—HISTORY OF FRENCH LITERATURE IN THE 18TH CENTURY; Montesquieu, Rousseau, the Encyclopedists. Lectures, essays, and outside reading. Books: Lanson, *Histoire de la littérature française*; Montesquieu, *Lettres persanes*; *Esprit des lois* (first five books and extracts, edited by Paul Janet, Paris, Delagrave); Rousseau, *Discours sur les sciences et les arts*, *Lettre sur les spectacles*, *Contrat social*, *Emile* (Livre IV, including the *Profession de foi du vicaire savoyard*); Diderot, *Extraits* (edition Fallex); D'Alembert, *Discours préliminaire de l'Encyclopédie*; Beaumarchais, *Mémoires*, *Le Mariage de Figaro*; Mirabeau, *Discours choisis*.

Collateral reading: Rambaud, *Histoire de la civilisation française*. 3 hours.  
Professor COHN

Open to students who have taken course II or its equivalent.

[Not given in 1895-6.]

The following down to course XII are open to students who have taken courses III or IV or their equivalent:

V—HISTORY OF FRENCH POETRY IN THE FIRST HALF OF THE 19TH CENTURY, ESPECIALLY VICTOR HUGO AND THE ROMANTIC MOVEMENT—Lectures, essays, and outside reading. Books: Lamartine, *Méditations*; Victor Hugo, *Preface to Cromwell*, *Hernani*, *Marion Delorme*, *Le Roi s'amuse*, *Ruy Blas*, *Les Burgraves*, *Odes et Ballades*, *Les Châtiments*; Alfred de Musset, *Poésies nouvelles*; Georges Pellissier, *Le Mouvement littéraire au XIXe Siècle*; Brunetière, *l'Evolution de la poésie lyrique en France au XIXe Siècle*; Lanson, *Histoire de la littérature française*. 1 hour. Professor COHN

[Not given in 1895-6.]

VI—HISTORY OF LITERARY CRITICISM IN FRANCE, ESPECIALLY SAINTE-BEUVE AND BRUNETIÈRE—Lectures, essays, and outside reading. Books: Sainte-Beuve, *Portraits littéraires* (extracts), *Portraits contemporains* (extracts), *Causeries du Lundi* (extracts), *Nouveaux Lundis* (extracts); Brunetière, *l'Evolution des genres dans l'histoire de la littérature* (volume I); Paul Bourget, *Essais de psychologie contemporaine*, *Première Série*; Hatzfeld et Meunier, *Les Critiques littéraires du XIXe siècle*. 1 hour. Professor COHN

[Not given in 1895-6.]

VII—THE FRENCH DRAMATISTS OF THE 19TH CENTURY—Books: Hugo, *Hernani*, *Ruy Blas*, *Marie Tudor*; Dumas, *Henri III et sa Cour*, *la Tour de Nesle*, *Antony*; Scribe, *Adrienne Lecouvreur*, *Une Chaîne*; Augier, *le Gendre de M. Poirier*, *l'Aventurière*; Dumas fils, *le Demi-Monde*, *l'Etrangère*; Sardou, *les Pattes de Mouche*, *Patrie*; Labiche, *le Voyage de M. Perrichon*; Meilhac et Halévy, *Froufrou*, *la Boule*; Zola, *Thérèse Raquin*. 2 hours.  
Professor BRANDER MATTHEWS

[Not given in 1895-6.]

VIII—MOLIÈRE AND HIS DRAMATIC METHOD—1 hour, first term. Professor BRANDER MATTHEWS

(Identical with first half of Literature V).

IX—WRITERS OF THE 16TH CENTURY, ESPECIALLY MONTAIGNE—Books: Darmesteter et Hatzfeld, *Le Seizième Siècle en France* (Paris, Delagrave); Montaigne, *Essais*. 1 hour. Mr. LOISEAUX

X—CRITICAL BIBLIOGRAPHY OF FRENCH LITERATURE FROM THE 16TH TO THE 19TH CENTURY—2 hours. Professor COHN, Dr. WOODWARD, Mr. LOISEAUX, and Dr. PAGE

XI—OLD FRENCH; reading of selected extracts—Books: Clédât, *Morceaux choisis des auteurs français du moyen âge*; Gaston Paris, *La Littérature française au moyen âge, Extraits de la Chanson de Roland*. 2 hours, first term. Dr. WOODWARD

XII—THE FRENCH CHRONICLERS OF THE MIDDLE AGES—Books: Petit de Julleville, *Chroniqueurs français du moyen âge*; Gaston Paris, *La Littérature française au moyen âge*. 2 hours, second term. Dr. WOODWARD

XIII—METHODS OF TEACHING FRENCH—2 hours. Professor COHN

Open both to students in the School of Arts and to students in Teachers College.  
[Not given in 1895-6.]

XIV—SEMINAR: SPECIAL TOPICS IN FRENCH LITERATURE; Historians and Philosophers of the 19th century. 2 hours. Professor COHN

N.B.—For other advanced courses in French Language or Literature, see under Romance Philology.

#### Optional Courses

FRENCH CONVERSATION (elementary course)—1 hour. Dr. PAGE

FRENCH CONVERSATION (advanced course)—1 hour. Mr. LOISEAUX

#### Courses in Provençal

I—OLD PROVENÇAL—Books: Bartsch, *Chrestomathie Provençale* (Elberfeld, 1880); Gröber's *Grundriss*, (Strasburg, 1888). 2 hours. Professor TODD

#### Courses in Italian

I—ELEMENTARY WORK—Grammar, reading, composition. Books: Grandgent, *Italian Grammar*; Grandgent, *Italian Composition Book*; Puccianti, *Antologia della Prosa Italiana Moderna*. 3 hours. Mr. SPERANZA

Open to juniors; open also to freshmen and sophomores, but only after they have shown their ability to pass the final examinations in French B and German B.

II—COMPOSITION. PROSE AND POETRY OF THE 15TH AND 16TH CENTURIES. Books: Fr. Torraca, *Manuale della Letteratura Italiana* (Torino, 1886). The school editions of *Orlando Furioso*, *Gerusalemme Liberata*, and *Il Principe*. 3 hours. Mr. SPERANZA

[Not given in 1895-6.]

III—COMPOSITION. PROSE AND POETRY OF THE 14TH CENTURY—Dino Compagni's *Cronica*; Boccaccio's *Decamerone*; Petrarch's *Canzoniere*; Dante's *Lyrics*. 3 hours. Mr. SPERANZA

[Not given in 1895-6.]

IV—CRITICAL STUDY OF DANTE'S DIVINA COMMEDIA, principally from the standpoint of art. 2 hours, for two years. Mr. SPERANZA

[Not given in 1895-6.]

V—HISTORY OF ITALIAN LITERATURE—Lectures and private reading. 1 hour. Mr. SPERANZA

[Not given in 1895-6.]

N.B.—For other advanced courses in Italian Language and Philology, see under Romance Philology.



### Courses in Spanish

I—ELEMENTARY COURSE—Grammar, reading, composition. Books: Ramsay, *Spanish Grammar*; Knapp, *Spanish Readings*; Valera, *Pepita Jimenez*; P. A. de Alarcon, *El sombrero de tres Picos*; Breton de los Herreros, *la Independencia*. 3 hours. Professor TODD and Mr. LOISEAUX

Open to juniors; open also to freshmen and sophomores, but only after they have shown their ability to pass the final examinations in French B and German B.

II—DON QUIJOTE AND THE LITERATURE OF THE GOLDEN AGE—Books: Knapp, *Spanish Grammar*; Cervantes, *Don Quijote*; *Entremeses*; Lope de Vega, *la Estrella de Sevilla*; Alarcon, *la Verdad sospechosa*; Juan Calderon, *Cervantes Vindicado*. 3 hours. Mr. SPERANZA

III—CRITICAL STUDY OF THE LITERATURE OF THE GOLDEN AGE—3 hours. Mr. ———.

[Not given in 1895-6.]

IV—THE ORIGINS OF SPANISH POETRY. EL POEMA DEL CID—2 hours. Professor TODD

[Not given in 1895-6.]

V—HISTORY OF SPANISH LITERATURE—Lectures and private reading. 1 hour. Professor COHN

[Not given in 1895-6.]

N.B.—For other advanced courses in Spanish Language and Philology, see under Romance Philology.

### Courses in Portuguese and Rumanian

Two courses are offered to advanced students, one in Portuguese, by Professor Todd, the other in Rumanian, by Professor Cohn. Each of them is a course of 2 hours throughout the year.

### Courses in Romance Philology

I—INTRODUCTION TO ROMANCE PHILOLOGY—2 hours. Professor TODD

Open to seniors in the School of Arts and to university students.

The following courses are open only to university students:

II—FORMATIVE ELEMENTS OF ROMANCE SPEECH—Lectures and class work. Books: Gröber, *Grundriss*; Schwan, *Altfranzösische Grammatik*. 1 hour. Professor TODD

[Not given in 1895-6.]

III—OLD FRENCH DIALECT—Books: Bartsch and Horning, *la Langue et la Littérature Françaises*; Suchier, *Reimpredigt*; Philippe de Thaon, *Cumpot* (Mall's edition). 1 hour. Professor TODD

[Not given in 1895-6.]

IV—SEMINAR—First term, *The Oldest Monuments of the French Language*. Second term, *Romances of Chrétien de Troyes*. 2 hours. Professor TODD

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N.B.—Weekly lectures in French, Italian, and Spanish, open to all members of the University, are given by the members of the department and by distinguished European lecturers.



The Romance Club, which consists of all the instructors and advanced students in the Department, holds fortnightly meetings in which the latest contributions to philology and literature in the field of the department are reported upon and discussed.

### Equipment

The library of Columbia College contains a large number of works in French, English, German, Italian, and Spanish, bearing upon the study of Romance languages and literatures. One of the latest additions is the library of the late Claude Pelletier, a member of the Assemblée Constituante and the Assemblée Législative of France (1848-1851), which was presented to the University by his widow.

### Scandinavian

(See page 76)

### Semitic Languages

(See page 106)

### Sociology and Statistics

(See page 57)

### Spanish

(See page 128)

### Surgery

WILLIAM TILLINGHAST BULL, M.D.....	<i>Professor</i>
ROBERT F. WEIR, M.D.....	<i>Professor</i>
CHARLES MCBURNEY, M.D.....	<i>Professor of Clinical Surgery</i>
FRANK HARTLEY, M.D.....	<i>Clinical Lecturer and Instructor in</i> <i>Operative Surgery</i>
FRANCIS HARTMAN MARKOE, M.D. ....	<i>Clinical Lecturer</i>
BERN BUDD GALLAUDET, M.D. ....	<i>Clinical Lecturer</i>
ELLSWORTH ELIOT, M.D.....	<i>Chief of Clinic and Instructor in</i> <i>Minor Surgery</i>
CHARLES T. PARKER, M.D.....	<i>Assistant Instructor in Operative Surgery</i>
LOUIS IRVING MASON, M.D.....	<i>Clinical Assistant</i>
EDWARD M. FOOTE, M.D.....	<i>Clinical Assistant</i>
JOSEPH J. HIGGINS, M.D.....	<i>Clinical Assistant</i>
FORBES HAWKES, M.D.....	<i>Clinical Assistant</i>

### Courses

I—SURGICAL PATHOLOGY, GENERAL AND REGIONAL SURGERY—Didactic lectures. 3 hours. Professors BULL and WEIR

Required, in the third and fourth years, of candidates for the degree of M.D.

II—CLINICS IN GENERAL SURGERY AT THE VANDERBILT CLINIC—1 hour. M, at 12. Professors BULL and WEIR

Required, in the third year, of candidates for the degree of M.D.

III—MINOR SURGERY AND BANDAGING—Practical instruction at the Vanderbilt Clinic. 12 lessons for each student. Dr. ELIOT

Required, in the third year, of candidates for the degree of M.D.

IV—OPERATIVE SURGERY UPON THE CADAVER—Practical instruction to classes of six members each. Each student performs for himself upon the cadaver the principal operations, including the ligation of arteries, amputations, resections, and the removal of parts. Special attention is paid to operations upon the abdominal viscera. 13 to 14 lessons for each student. Drs. HARTLEY and PARKER

Optional, in the fourth year, for candidates for the degree of M.D.

V—HOSPITAL CLINICS IN GENERAL AND OPERATIVE SURGERY.  
New York Hospital.

Sat. at 2.30 P.M. Professors BULL AND WEIR

W. at 2.30 P.M. from October to February. Professor WEIR

Th. at 3 P.M. from February to June. Dr. HARTLEY

Roosevelt Hospital, Syms Operating Theatre.

Sat. at 2.30 P.M. Professor MCBURNEY

Bellevue Hospital.

Th. at 2.30 P.M. Drs. F. H. MARKOE and GALLAUDET

St. Luke's Hospital.

F. at 2.30 P.M. from October to February. Dr. F. H. MARKOE

Attendance at hospital clinics is obligatory in the third and fourth years for candidates for the degree of M.D.

## Toxicology

(See page 53)

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## UNIVERSITY DEGREES

### Regulations for the Degrees of Master of Arts and Doctor of Philosophy

1. Candidates for the degrees of Master of Arts and Doctor of Philosophy must hold a baccalaureate degree in arts, letters, philosophy, or science, or an engineering degree, or an equivalent of one of these from a foreign institution of learning.

The Deans of the several schools will require candidates for the higher degrees to present satisfactory evidence that they are qualified for the studies they desire to undertake.

2. Candidates for the degrees of Master of Arts and Doctor of Philosophy must pursue their studies in residence for a minimum period of one and two years, respectively.\* The year spent in study for the degree of Master of Arts is credited on account of the requirement for the degree of Doctor of Philosophy. Residence at other universities may be credited to a candidate. In certain cases and by special arrangement, time exclusively devoted to investigation in the field will be credited in partial fulfilment of the time required. No degree will be conferred upon any student who has not been in residence at Columbia College for at least one year.

3. Each student who declares himself a candidate for the degrees of Master of Arts and Doctor of Philosophy, or either of them, shall, immediately after registration, designate one principal or major subject and two subordinate or minor subjects, which shall be the studies of his university course.

4. The subjects from which the candidate's selection must be made are :

#### UNDER THE FACULTY OF PHILOSOPHY :

I. *Major Subjects* : 1. Philosophy ; 2. psychology ; 3. education ; 4. linguistics ; 5. literature ; 6. classical archæology and epigraphy ; 7. Greek language, literature, and, incidentally, history ; 8. Latin language and literature, and, incidentally, Roman history ; and the following, *including in each case the study of both the language and the literature* ; 9. English ; 10. Germanic ; 11. Romance ; 12. Sanskrit (with Pāli) and Iranian ; 13. Semitic. Nos. 10, 11, 12, and 13 count each as the equivalent of a major and one minor subject.

II. *Minor Subjects* : 1. Philosophy ; 2. psychology ; 3. logic ; 4. education ;

\* In practice three years of study is usually necessary to obtain the degree of Doctor of Philosophy.

5. anthropology ; 6. linguistics ; 7. literature ; 8. Greek ; 9. Greek archæology ; 10. Latin ; 11. Roman archæology ; 12. Sanskrit ; 13. Iranian ; 14. English ; 15. Anglo-Saxon and Gothic ; 16. Germanic philology ; 17. German language and literature ; 18. Scandinavian languages and literatures ; 19. Romance philology ; 20. French language and literature ; 21. Spanish and Italian languages and literatures ; 22. Hebrew ; 23. Arabic ; 24. Assyrian ; 25. Syriac ; 26. Ethiopic ; 27. Semitic epigraphy.

In his choice of subjects under this faculty, the candidate is limited by the regulation that not more than two of the three subjects may be selected from those offered by any one department. A major subject will involve attendance at lectures and seminars amounting to four or more hours weekly ; a minor subject will involve attendance of two or more hours weekly.

#### UNDER THE FACULTY OF POLITICAL SCIENCE :

Group I.—History and political philosophy : 1. European history ; 2. American history ; 3. political philosophy.

Group II.—Public law and comparative jurisprudence . 1. constitutional law ; 2. international law ; 3. criminal law ; 4. administrative law ; 5. comparative jurisprudence.

Group III.—Economics and social science : 1. political economy and finance ; 2. sociology and statistics.

In his choice of subjects under this faculty, the candidate is limited by the regulation that not more than two of the three subjects may be selected from any one of the above groups, and by the following rules :

Candidates offering European history as the major subject, must offer American history as one of the minor subjects, and *vice versa*.

Candidates offering political economy and finance as the major subject, must offer sociology and statistics as one of the minor subjects, and *vice versa*.

Candidates will not be permitted to offer constitutional law alone as the major subject for the degree of Doctor of Philosophy, but must combine with it the course on general international law, or on comparative administrative law.

Candidates offering international law, or criminal law, or administrative law as the major subject, must take constitutional law as one minor subject.

Candidates will not be permitted to offer criminal law alone as the major subject for the degree of Doctor of Philosophy, but must combine with it the course on general international law.

To be recognized as a major subject for the degree of Master of Arts the courses selected must aggregate at least two hours per week throughout the year, and must also include attendance at a seminar ; for a minor subject for the degree of Master of Arts, the attendance at a seminar is not required.

To be recognized as a minor subject for the degree of Doctor of Philosophy, courses must be taken, in addition to the requirements for a minor subject for the degree of Master of Arts, aggregating two hours weekly. To be recognized as a major subject for the degree of Doctor of Philosophy, all of the courses and seminars offered in that subject must be taken.

UNDER THE FACULTY OF PURE SCIENCE: Mathematics ; mechanics ; astronomy ; geodesy ; physics ; chemistry ; mineralogy ; geology ; palæontology ; lithology ; biology ; botany ; physiology ; anatomy ; bacteriology.

In his choice of subjects under this faculty, the candidate is limited by the regulation that no two of the subjects selected may be in any one department, unless the consent of the faculty thereto shall have first been obtained. Candidates are expected to devote at least one-half their time throughout their course of study to the major subject. In the case of laboratory courses this implies two days a week, or its equivalent, as determined by each department. Each minor subject is intended to occupy approximately one-fourth of the time during one year for the degree of Master of Arts, and during one or two years, according to the nature of the subject and the previous training of the candidate, for the degree of Doctor of Philosophy. Students may distribute the remainder of their time either in courses of major or minor reading in branches where their preparation is least complete, or in researches connected with their major subject.

UNDER THE FACULTY OF MINES: Mining, metallurgy, engineering (civil, mechanical, electrical and sanitary), and architecture.

The Faculty of the School of Mines requires that at least one minor subject must be taken under the Faculty of Pure Science.

A minor subject may be taken in the same department as the major, but no two minors may be taken in the same department. It is expected that fully half of the students' time throughout the course of study shall be devoted to the major subject, and one-quarter of the time during one year and an equal proportion of the second year, if necessary, to each of the minor subjects.

5. Each student is given a registration book, which is signed by the professor or instructor in charge of each course of instruction or investigation at the beginning and end of every such course. This registration book is to be preserved by the student as evidence of work accomplished and should be submitted to the deans of the several faculties at the end of each year, that proper credit may be given and entered on the permanent records of the institution.

6. Students desiring to be examined as candidates for any degree must make written application for such examination to the Dean of the proper faculty, on blank forms provided for the purpose. All such applications must be made on or before April 1st of the academic year in which examination is desired, and must be accompanied by the candidate's registration book, properly signed as above provided.

7. Each candidate for the degree of Master of Arts, shall present an essay on some topic previously approved by the professor in charge of his major subject. Before the candidate is admitted to examination the professor in charge of his major subject must have signified his approval of such essay. The Faculty of Philosophy requires that this essay be presented not later than May 1st of the academic year in which the examination is to take place. The Faculty of Political Science requires this essay to be a paper read during the year before the seminar of which the candidate is a member.

8. Each candidate for the degree of Doctor of Philosophy shall present a dissertation, embodying the result of original investigation and research, on some topic previously approved by the faculty. When such dissertation has been approved by the faculty, it shall be printed by the candidate, and one hundred



and fifty copies shall be delivered to the faculty, unless for reasons of weight, a smaller number be accepted by special action of the University Council. On the title-page of every such dissertation shall be printed the words: "Submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy, in the University Faculty of \_\_\_\_\_, Columbia College. There shall be appended to each dissertation a statement of the educational institution that the author has attended, a list of the degrees and honors conferred upon him, as well as the titles of any previous publications.

The several faculties have delegated the power to approve the subject chosen for his dissertation by any candidate for the degree of Doctor of Philosophy, as well as the power to approve the dissertation itself, to the professor in charge of the candidate's major subject.

The Faculty of Philosophy requires the submission and approval of the dissertation before the candidate is admitted to examination.

The Faculty of Political Science requires the dissertation to be submitted not later than April 1st of the academic year in which the examination for the degree is desired. With the consent of the Dean and the professor in charge of the candidate's major subject the examination may be held before the printed dissertation is submitted.

The Faculty of Pure Science requires the dissertation to be submitted not later than the third week in March of the academic year in which the examination is desired; and when printed it must be printed in the size and form either of the *Annals* or *Memoirs* of the New York Academy of Sciences, according to the nature of the subject, and must be delivered to the faculty before the final examination.

The Faculty of Mines requires the dissertation to be submitted for approval not later than April 1st and that it be printed in the size and style of the *School of Mines Quarterly*, and delivered to the faculty not later than May 1st of the academic year in which the examination is to take place.

9. Every candidate for the degree of Doctor of Philosophy, in addition to passing such other examinations as may be required by the faculty, shall be subjected to an oral examination on his major subject, and shall defend his dissertation, in the presence of the entire faculty or of so many of its members as may desire to attend. The ability to read at sight Latin, French, and German is required by the Faculties of Philosophy and Political Science; the ability to read at sight French and German is required by the Faculties of Pure Science and of the School of Mines, to be certified in each case by the Dean of the faculty concerned.

10. Students holding college degrees, who shall have completed with marked distinction one of the regular courses in the School of Law, the School of Medicine, or the School of Mines, may be recommended for the degree of Master of Arts; provided that in each case the candidate presents a satisfactory dissertation, and that at least a part of the extra work required of him for the degree of Master of Arts be taken under the direction of either the Faculty of Philosophy, the Faculty of Political Science, or the Faculty of Pure Science, to the extent of a minor course for not less than one year.



### Regulations for the Degree of Master of Laws

1. Any student who has satisfactorily completed the regular course of study in the School of Arts, to the close of the junior year, or in some other college maintaining an equivalent curriculum (every such case of equivalency to be considered on its own merit), shall be entitled to be recommended for the degree of Master of Laws upon certificates from the Faculty of Law and the Faculty of Political Science that he has satisfactorily completed a four years' course of study under said faculties.

2. Every candidate for the degree of Master of Laws must elect from the subjects offered by said faculties, courses aggregating, in the four years, fifty-two hours per week, and must pass satisfactory examinations upon the subjects elected; provided that not more than thirty-four hours of work may be elected either in the field of Private Law, or in that of Public Law, Social Ethics, History and Economics.

3. Students, otherwise qualified, who have received the degree of Bachelor of Laws from this University after pursuing the full course of study, shall be entitled, upon pursuing for an additional year a course of study of at least thirteen hours per week, under either or both of said faculties, and passing satisfactory examinations therein, to receive the degree of Master of Laws; provided that no student shall receive the degree who has not studied and passed satisfactory examinations in Comparative Constitutional Law, Administrative Law, Roman Law, International Law, and in the three courses offered on Equity\* and who has not pursued here or elsewhere, courses of instruction satisfactory to the Faculty of Political Science in History, Social Ethics and Economics.

4. Each faculty shall determine the order in which the subjects offered by it shall be taken, and the maximum amount of work to be done therein during any one year.

5. Students from other universities, colleges, or law schools who shall have satisfactorily completed a course of study equivalent to at least one term of thirteen hours per week in the subjects indicated in Section 2, after receiving a Bachelor's degree, may be excused from the corresponding number of terms of the four years' residence required at Columbia, provided that in no case shall any one receive the degree of Master of Laws who has not spent at least four years in the study of the said subjects in some university, college, or law school; and the decision whether work at another institution shall be accepted as equivalent to work at Columbia, shall rest, as far as the studies under the faculty of Law are concerned, with the Faculty of Law, and as far as the studies under the Faculty of Political Science are concerned, with the Faculty of Political Science. But neither faculty shall admit a student from another university, college, or law school to examination for the degree of Master of Laws without a residence of at least one term in this University.

\* Under this provision students would be allowed, but not required, to take History of European Law, Conflict of Private Law, Law of Municipal Corporations, and the Law of Taxation.

## SCHOOL OF ARTS

The following departments are represented in the Faculty :

ASTRONOMY	GREEK
BIOLOGY	HEBREW
BOTANY	HISTORY
CHEMISTRY	LATIN
ENGLISH	MATHEMATICS
ENGLISH LANGUAGE	MECHANICS
AND LITERATURE	PHILOSOPHY, ETHICS
LITERATURE	AND PSYCHOLOGY
RHETORIC AND ENG-	PHYSICS
LISH COMPOSITION	POLITICAL ECONOMY
GEOLOGY	ROMANCE LANGUAGES
GERMANIC LANGUAGES	AND LITERATURES
AND LITERATURES	

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### Officers of the Faculty

*Ex-Officio Members of the University Council*

J. H. VAN AMRINGE, Ph.D., L.H.D., LL.D.....	<i>Dean</i>
H. T. PECK, Ph.D., L.H.D.....	<i>Secretary</i>

### Standing Committees for 1895-96

COMMITTEE ON CURRICULUM AND SCHEME OF ATTENDANCE	COMMITTEE ON ENTRANCE EXAMINATIONS
Professor Van Amringe, <i>Chairman</i>	Professor Peck, <i>Chairman</i>
" Mayo-Smith	" W. H. Carpenter
" Butler	" Cohn
" Woodberry	" Perry
" Perry	" G. R. Carpenter
COMMITTEE ON FREE AND REDUCED TUITION	" Fiske
Professor Van Amringe, <i>Chairman</i>	COMMITTEE ON HONORS
" Price	Professor Peck, <i>Chairman</i>
" Rees	" Hallock
	" Woodward

**Faculty**SETH LOW, LL.D., *President*

- J. HOWARD VAN AMRINGE, Ph.D., L.H.D., LL.D., *Professor of Mathematics*  
 OGDEN N. ROOD, A.M., *Professor of Physics*  
 JOHN W. BURGESS, A.M., Ph.D., LL.D., *Professor of History, Political Science, and Constitutional Law*  
 CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*  
 RICHMOND MAYO-SMITH, Ph.D., *Professor of Political Economy and Social Science*  
 THOMAS R. PRICE, M.A., LL.D., *Professor of the English Language and Literature*  
 JOHN KROM REES, A.M., E.M., Ph.D., *Professor of Astronomy*  
 H. T. PECK, Ph.D., L.H.D., *Professor of the Latin Language and Literature*  
 NICHOLAS MURRAY BUTLER, Ph.D., *Professor of Philosophy and Education*  
 \*EDWIN R. A. SELIGMAN, LL.B., Ph.D., *Professor of Political Economy and Finance*  
 WILLIAM H. CARPENTER, Ph.D., *Professor of Germanic Philology*  
 ADOLPHE COHN, LL.B., A.M., *Professor of the Romance Languages and Literatures*  
 GEORGE EDWARD WOODBERRY, A.B., *Professor of Literature*  
 EDWARD DELAVAN PERRY, Ph.D., *Jay Professor of the Greek Language and Literature*  
 A. V. WILLIAMS JACKSON, A.M., L.H.D., Ph.D., *Professor of the Indo-Iranian Languages*  
 NATHANIEL L. BRITTON, E.M., Ph.D., *Professor of Botany*  
 RICHARD J. H. GOTTHEIL, Ph.D., *Professor of Rabbinical Literature and the Semitic Languages*  
 WILLIAM A. DUNNING, Ph.D., *Adjunct Professor of History*  
 HENRY F. OSBORN, D. Sc., *Da Costa Professor of Biology*  
 JAMES F. KEMP, E.M., *Professor of Geology*  
 EDMUND B. WILSON, Ph.D., *Professor of Invertebrate Zoölogy*  
 WILLIAM HALLOCK, A.B., Ph.D., *Adjunct Professor of Physics*  
 ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*  
 GEORGE R. CARPENTER, A.B., *Professor of Rhetoric and English Composition*  
 HENRY A. TODD, Ph.D., *Professor of Romance Philology*  
 THOMAS SCOTT FISKE, A.M., Ph.D., *Adjunct Professor of Mathematics*  
 HAROLD JACOBY, A.M., *Adjunct Professor of Astronomy*  
 JAMES RIGNALL WHEELER, Ph.D., *Professor of Greek*  
 JAMES C. EGBERT, JR., A.M., Ph.D., *Adjunct Professor of Latin*  
 JAMES H. HYSLOP, Ph.D., *Professor of Logic and Ethics*  
 ———— *Professor of the Germanic Languages and Literatures*

**Emeritus Officers**

- HENRY DRISLER, LL.D., *Emeritus Professor of the Greek Language and Literature*  
 JOHN D. QUACKENBOS, A.M., M.D., *Emeritus Professor of Rhetoric*

For details as to other officers of instruction see departmental statements

\*Absent on leave

## RULES AND REGULATIONS FOR THE GOVERNMENT OF STUDENTS

*From the Revised Statutes*

1 (a) There shall be four classes of students, to be designated respectively as the freshman class, the sophomore class, the junior class, and the senior class. The course of study of each of these classes shall occupy a year, and the entire course four years. C. viii, section 4.

(b) Every student who shall have completed the entire course of four years, and shall have passed satisfactorily all the examinations required of him, shall be qualified to receive the degree of Bachelor of Arts. C. viii, section 5.

(c) No student shall be admitted to the freshman class, at its formation, unless he shall have attained the age of fifteen years, nor to a more advanced standing without a corresponding increase of age; but this rule may be dispensed with when, in the opinion of the Dean, there are sufficient reasons to justify its relaxation. C. viii, section 2.

(d) Every candidate for admission shall be required to present, before examination, a certificate of good moral character from his last teacher, or from some citizen in good standing; and students from other colleges shall be required to bring certificates from such colleges of honorable discharge. C. viii, section 3.

**Entrance Examination**

2 The entrance examination is designed to test the ability of the candidate to undertake the course of study, and not merely to ascertain the character and the amount of his acquired knowledge.

3 Each applicant for admission to the freshman class must file with the Dean, at least one week before the day fixed for the entrance examinations, a certificate from his principal instructor containing a definite statement of the subjects which he is qualified to offer for examination and the certificate as to his moral character which is required by the College statutes (1 d). No student will be examined in June, 1896, whose name is not enrolled and whose certificate is not filed on or before June 3, 1896; nor will any student be examined in September, 1896, whose name is not enrolled and whose certificate is not filed on or before September 21, 1896. Blank forms of the certificate required can be had on application to the registrar. In the case of students expecting to be examined at a distance from the College, the names must be enrolled and the certificates filed one week earlier.

4 Entrance examinations will be held at the College on commencement day and the three days immediately following in June, and on the last Monday in September and the three days immediately following. In 1896, the examinations will begin on June 10 and September 28; in 1897, on June 9, and September 27. There will be two examinations daily: one session from 9.30 A.M.-12 M.; the other from 1.30 P.M.-4 P.M.

5 Applicants for admission to the freshman class are required to pass a satisfactory examination in the following seventeen subjects:

*English :*

- 1 Grammar—(Whitney's Essentials of English Grammar indicates the field to be covered.)
- 2 Composition—The candidate will be required to write an essay of at least two hundred and fifty words, based upon some subject taken from one of the four works in English literature prescribed for the year. The essay must be written during the examination, and will be judged in reference to spelling, punctuation, grammar, division by paragraphs, and expressions.

For 1896, the works prescribed—all of which the candidate will be expected to have read—are :

Shakspeare's Merchant of Venice, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, Macaulay's Essay on Milton, and Webster's first Bunker Hill Oration.

For 1897, the works prescribed are :

Shakspeare's Macbeth, Burke's Speech on Conciliation with America, De Quincey's The Flight of a Tartar Tribe, Tennyson's The Princess.

Prescribed for candidates offering English in 1897 and succeeding years. Candidates offering English in 1896 may choose between the method now in force and that here stated.

No applicant will be accepted in English whose work is notably defective in point of spelling, grammar, idiom, punctuation, or division into paragraphs.

- 1 Reading and Composition—The candidate will be required to present evidence of a general knowledge of the subject matter of the prescribed books, and to answer simple questions on the lives of their authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number (perhaps ten or fifteen) set before him in the examination paper. The treatment of these topics is designed to show the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In the place of a part or whole of this test, the candidate may present an exercise-book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The candidate is expected to read intelligently all the books prescribed. He should read them as he reads other books ; he is not expected to know them minutely, but to have freshly in mind their most important parts.

- 2 Study and Composition—This part of the examination presupposes the thorough study of each of the works named below. The examination will be upon subject matter, literary form, and grammatical and logical structure.



In connection with the reading and study of the required books, parallel or subsidiary reading should be encouraged, and a considerable amount of English poetry should be committed to memory. The essentials of English grammar should not be neglected in preparatory study.

The books prescribed are for the present to be those selected and recommended by the Association of Colleges and Preparatory Schools in the Middle States and Maryland, and similar bodies, acting jointly.

*Latin :*

- 3 Five books of Cæsar's Commentaries on the Gallic War.
- 4 Six orations of Cicero ; reading at sight a short passage of easy Latin prose.
- 5 The first six books of Vergil's *Æneid*.
- 6 Prosody.
- 7 Grammar and prose composition. (As to the latter, Daniell's Exercises in Latin Prose Composition, both parts, indicates the field to be covered.)

*Greek :*

- 8 Xenophon's *Anabasis*, Books 1 and 2.
- 9 Xenophon's *Anabasis*, Books 3 and 4 ; reading at sight a short passage of easy Greek prose.
- 10 Three books of Homer's *Iliad*, with prosody.
- 11 Grammar and prose composition. (As to the latter, Jones's Exercises in Greek Prose Composition indicates the field to be covered.)

*Ancient History and Geography :*

- 12 The ancient history of Greece and Rome (the treatment of this subject in Myers's *Ancient History* indicates the field to be covered), including the historical geography of these countries.

*Mathematics :*

- 13 Arithmetic : greatest common divisor and least common multiple, common and decimal fractions, percentage not including its commercial applications, square root, and the metric and other ordinary systems of weights and measures. Special importance is attached to accuracy and facility in calculation.
- 14 Algebra : factors, common divisors and multiples, fractions, equations of the first degree with one or more unknown quantities, involution including the binomial theorem for positive entire exponents, evolution, the doctrine of exponents, radicals and equations involving radicals, and putting problems into equations.
- 15 Geometry : plane geometry, including the solution of simple original exercises and numerical problems.

*French or German :*

- 16a The ability to read easy French, such as Rambaud's *Histoire de la Civilization Française*, and



- 17a The elements of French grammar ; or
- 16b The ability to read easy German, such as Hauff's or Grimm's Märchen, and
- 17b The elements of German grammar.

6 The results of an entrance examination, entire or partial, will not be allowed to stand to the credit of a candidate for a longer period than sixteen months.

7 The Committee of the Faculty on Entrance Examinations will decide, and report to the Dean, within twelve days after the conclusion of the examination, the names of candidates that have been admitted, of those admitted conditionally, and of those that have been rejected.

8 Students admitted conditionally to the freshman class at the beginning of the academic year shall be held under probation till the end of the first term.

Not later than Tuesday of the second week following the Christmas holidays, the head of each department, in which students with entrance conditions attend, shall make to the Dean a special report of progress in the case of each conditioned student. The Dean shall lay these reports before the Committee on Entrance Examinations, and that Committee, in conjunction with the Dean, shall, as soon as practicable and before the end of the term, decide as to each conditioned student, whether he shall be dropped from the roll of the college or have his period of probation extended.

No student shall be admitted to the sophomore class until he shall have satisfied all his entrance conditions.

### Preliminary Examination

9 An applicant duly enrolled, who has filed the required certificate from his principal teacher, may, at the time appointed for the examination in May or June of the year preceding his admission into the freshman class, but not in September or October, be examined on certain portions of the foregoing subjects. Such an applicant may offer at the preliminary examination the following :

*Latin* : Subject 3 and, if desired, either 4 or 5.\*

*Greek* : Subject 8 and, if desired, 9.\*

*Mathematics* : Subject 13 and, if desired, 14.

10 After such preliminary examination, applicants will not be allowed to finish their examination on the requirements for admission until the entrance examination of the following year, without the written approval of the Dean to be obtained during the month of June.

### Admission of Special Students

11 The School of Arts offers special courses of study to young men, of proper age and character, who wish, without reference to any degree, to make a serious study of any special subject, or group of subjects. Candidates for ad-

\* At the preliminary examination the candidate will be tested, but not passed, in Latin and Greek grammar.

mission to such special courses must make application to the Dean, and show evidence of good character and of special fitness for the study that each wishes to pursue. Each candidate will be examined :

- 1st. In English composition by the Professor of Rhetoric, to show that he is able to use the language correctly.
- 2d. In each special study by the head of that department, to show that he is competent to enter upon the course.

Except for reasons of weight, no one will be received as a special student who has, within ten months of the time of his application, been rejected as a regular student by the Committee on Entrance Examinations, or has, within that time, become deficient as a regular student.

### Admission to Advanced Standing

12 Candidates for admission from other colleges, and those desiring to be admitted to advanced standing on examination, will make application to the Dean.

The following are the Regulations for the admission of students from other colleges :

1 Each applicant, if he come from a college that gives a satisfactory classical and mathematical course, may be admitted, on the proper certificate of the college that he leaves, to the second term of the freshman class, or to the sophomore class, or to the first term of the junior class.

2 Each applicant for admission to the second term of the junior class, or to the senior class, if he come from a college that gives a satisfactory classical and mathematical course, shall, before admission, satisfy the professor of each department in which he wishes to study, by examination or otherwise, that he is competent to pursue the course that he wishes to undertake.

3 Each applicant may be allowed to pursue his studies in each department with the most advanced class that he is found competent to enter, it being understood that, before applying for the A.B. degree, he shall bring all his studies up to the point demanded for that degree.

No applicant will be allowed to enter the senior class as a candidate for the degree of A.B. after October 15 of any year.

### Examinations

13 Two examinations of all the classes are held every year, one commencing on the last Monday in January, and the other on the Monday of the third week preceding commencement. The former is called the mid-year examination ; the latter, the final examination. Any department may omit the mid-year examination in some or all of its courses for seniors, notice of such intended omission to be sent to the Dean on or before December 1st preceding.

It is the privilege of any department to announce that in some or all of the courses the result of the mid-year examination will be tentative only, the grade given after the final examination applying to the whole year.

14 Any student who shall have been absent from more than ten per cent.

of the exercises in any course during a single term, shall not be entitled to examination in that course.

15 Every student is expected and required to keep an account of his absences, and should he exceed the limit allowed in any course, he must present to the Dean, during the week preceding the stated examination, satisfactory explanation of all his absences, or be debarred from the examination.

16 (a) A student absent from a mid-year or final examination in any course will be accounted deficient in that course.

(b) A student reported, at the close of the year, in Grade E in more than one course, or in Grade E in one course and in Grade D in more than two other courses, will be dropped from the roll of his class.

(c) A student dropped from the roll of his class will not be permitted to attend any of the exercises of the said class without the consent of the Dean, given for reasons of weight; but he may enter the next succeeding class and pursue the course or courses in which his deficiency exists, or, in case of elective courses and with the consent of the Dean, other course or courses equivalent thereto in time, and present himself for examination in such course or courses with that class. Upon failing with that class, in any repeated or substituted course, his name will be dropped from the roll of the college. No student dropped from the roll of his class or of the college under the provisions of this section, will be accepted as a special student, except as provided in rule 11.

(d) No student shall be promoted to the junior class who is deficient in any course of the freshman class; and no student shall be promoted to the senior class who is deficient in any course of the sophomore class.

17 Examinations to enable deficient or debarred students to make good their deficiencies, are held within the two weeks immediately preceding the opening of the College in October; and, for members of the senior class only, during the first week in May.

### Proficiency and Deficiency

18 At the close of every term, and after the stated examination has been held, each officer of instruction will report to the Dean a list of all the students in his several courses, classifying them in five grades, namely, A, B, C, D, E, according as their work in the course has been excellent, good, fair, poor, or a failure. Each student's record, up to his senior year, will be transmitted to his parent or guardian by the Dean at the close of each term.

19 Students reported in grade E in any course shall be deemed deficient in that course, and required to pass another examination in it at the time fixed for the special examination for debarred and deficient students, unless, for reasons of weight, the Dean shall otherwise direct.

20 Students reported in grade D in any course shall be warned by the instructor in charge thereof that their work is so unsatisfactory that, unless improved, it may result in their being found deficient at the close of the next term.

**21** Students reported in grade D in two or more courses shall be warned by the Dean that their record is not satisfactory and that, unless improved, it may be found necessary to require them to take the courses a second time or to substitute other courses.

**22** A student reported in grade D in four or more courses at the close of the year, and not reported in grade A or B in any course, or a student reported in grade E in one course and in grade D in two other courses, will not be permitted to go on with his class without the consent of the Dean, given for reasons of weight, nor will he be accepted as a special student (see Rule 11); but he may enter the next succeeding class.

**23** (a) No scholarship, prize, or other honor shall be awarded in any course or department to any student who is reported in a grade below C in any other course or department during the year in which he is a candidate for such scholarship, prize, or honor.

(b) Each student to whom honors may be awarded in any department shall receive, immediately after commencement, a certificate of such award, under the seal of the College and bearing the signatures of the President and the Dean.

### Honors

**24** Honors are awarded at the end of the second year, the end of the third year, and at the end of the course, and are known respectively as Sophomore Honors, Junior Honors, and Final Honors.

Sophomore Honors are awarded in classics, rhetoric and English composition, Germanic languages and literatures, Romance languages and literatures, and mathematics.

Junior Honors are awarded in classics, English language and literature, rhetoric and English composition, Germanic languages and literatures, Romance languages and literatures, literature, mathematics, physics and chemistry, and in history.

Final Honors are awarded in classics, English language and literature, rhetoric and English composition, Germanic languages and literatures, Romance languages and literatures, literature, mathematics, physics and chemistry, biology and botany, history, political economy, and in philosophy.

**25** Each candidate for honors must give notice of the fact to the Dean not later than the beginning of the second term of the year in which he is to present himself for examination. Substitutes for the courses specified below for honors may be allowed by the Faculty on petition, when good cause is shown.

### Sophomore Honors

**26** (a) **CLASSICS**—Candidates for Sophomore Honors in classics, must have taken Greek A and B and Latin A and B (see Courses of Instruction), and must not have been classed below grade B in any of them. In addition they will be examined in reading Latin and Greek at sight, in Latin and Greek prose composition, and in some special subject connected with the Greek or Latin language or literature, the same to be announced on or before December 1 of each year.



(*b*) RHETORIC AND ENGLISH COMPOSITION—Candidates for Sophomore Honors in rhetoric and English composition must have attained a grade of at least C in Rhetoric A and must attain a grade of at least B in Rhetoric B. They will be judged by special essay on a subject to be announced on or before December 1 of each year.

(*c*) GERMAN—Candidate for Sophomore Honors in German must have taken at least two courses in German, chosen from A, B, I and II, and must not have been classed below grade B in any of them. They will also be examined in reading German at sight, in German conversation, and in some special subject connected with the German language or literature, the same to be announced on or before December 1 of each year.

(*d*) ROMANCE LANGUAGES—Candidates for Sophomore Honors in Romance languages must have taken at least two courses in French, chosen from A, B, I and II, and must not have been classed below grade B in any of them. They will also be examined in reading French at sight, in French conversation, and in some special subject connected with the French language or literature, the same to be announced on or before December 1 of each year. They may, with the consent and approval of the Professor of the Romance Languages and Literatures, be allowed to substitute courses in Italian or Spanish for the courses in French above mentioned.

(*e*) MATHEMATICS—Candidates for Sophomore Honors in mathematics must not have been classed below grade B in Mathematics A and B (see Courses of Instruction) and will also be required to pass an examination on such additional work as may be announced by the Professor of Mathematics on or before December 1 of each year.

### Junior Honors

27 Candidates for Junior Honors in classics, rhetoric and English composition, German, Romance languages, and mathematics, respectively, must either have gained Sophomore Honors in the same subject; or have taken the courses and received the grade necessary to qualify them to compete for Sophomore Honors therein; or have been reported in grade A in all of the courses taken during junior year in the department in which application for honors is made.

28 (*a*) CLASSICS—Candidates for Junior Honors must have complied with the provisions of 27, and also have taken courses in the departments of Greek and Latin amounting to at least four hours a week in each, and must not have been classed below grade B in any of them. They will also be required to pass an examination on such additional matter as may be agreed upon by the Professors of Greek and Latin, and announced on or before December 1 of each year.

(*b*) ENGLISH—Candidates for Junior Honors in the English language and literature may offer special work in connection with any of the courses open to juniors in the department. The subject of such special work in each course shall be defined by the Professors in charge, on or before December 1 of each year; and the Honors shall be given, on special examination, to those

candidates that attain grade A in the special work without falling below grade C in any of their other courses.

(c) RHETORIC AND ENGLISH COMPOSITION—Candidates for Junior Honors in rhetoric and English composition must have attained a grade of at least C in Rhetoric A and of at least B in Rhetoric B, and must attain a grade of at least B in Rhetoric C, Rhetoric I and Rhetoric II. They will be judged by a special essay on a subject to be announced on or before December 1 of each year.

(d) GERMAN—Candidates for Junior Honors in German must have complied with the provisions of 27, and must also have taken two additional courses in the Germanic languages, and must not have been classed below grade B in any of them. They will also be required to pass an examination on some special subject selected by the Professor of the Germanic languages and literatures, and announced on or before December 1 of each year.

(e) ROMANCE LANGUAGES—Candidates for Junior Honors in Romance languages must have complied with the provisions of 27, and must also have taken courses amounting to at least three hours a week of additional work in French, and must not have been classed below grade B in any of them. They will also be required to pass an examination on some special subject selected by the Professor of the Romance Languages and Literatures and announced on or before December 1 of each year. They may, with the consent and approval of the Professor of the Romance languages and literatures, be allowed to substitute courses in Italian or Spanish for the courses in French above mentioned.

(f) LITERATURE—Candidates for Junior Honors in literature may offer special work in connection with any one of the courses open to Juniors in the department or of approved courses open to them in cognate departments. The subject of each special work shall be defined by the head of the department in conference with the candidate, on or before the 1st of December of each year, and the Honors shall be given, on examination or other written work as may in each case be determined, to those candidates that attain grade A in such special work without falling below grade C in any of their other courses.

(g) MATHEMATICS—Candidates for Junior Honors must have complied with the provisions of 27, and also have taken Mathematics I and Mechanics I, and not have been classed below grade B in any of them. They will also be required to pass a special examination on some subject agreed upon by the Professors of Mathematics and Mechanics, and announced on or before December 1 of each year.

(h) PHYSICS AND CHEMISTRY—Candidates for Junior Honors must have taken Chemistry I (unless taken in Sophomore year, in which case Chemistry II must be substituted) and Physics I, and must not have been classed below grade B in any of them. They will also be required to pass a special examination in some subject agreed upon by the Professors of Physics and Chemistry, and announced on or before December 1 of each year.

(i) HISTORY—Candidates for Junior Honors must have taken History A, and all the courses in history offered to Juniors, and must not have been classed below grade B in any of them. They will also be required to pass a special



examination in some subject announced by the Professor of History on or before December 1 of each year.

### Final Honors

29 Candidates for Final Honors in classics, English language and literature, rhetoric and English composition, German languages and literatures, Romance languages and literatures, literature, mathematics, physics and chemistry, biology and botany, history, political economy, and philosophy, respectively, must either have gained Junior Honors in the same subject; or have taken the courses and received the grade necessary to qualify them to compete for Junior Honors therein; or have been reported in grade A in all of the courses taken during senior year in the department in which application for honors is made.

(a) CLASSICS—Candidates for Final Honors must have complied with the provisions of 29, and also have taken additional courses in the departments of Greek and Latin, amounting to at least six hours a week, and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Greek and Latin, and announced on or before December 1 preceding.

(b) ENGLISH—Candidates for Final Honors in the English language and literature may offer special work in connection with any one of the courses open to seniors in the department. The subject of such special work in each course shall be defined by the professor in charge, on or before the 1st of December; and the Honors shall be given, on special examination, to those candidates that attain grade A in the special examination without falling below grade C in any of their other courses. As part of his special work, each candidate must submit, on or before the 1st of May, an essay of not less than 3000 words dealing with some aspect of the subject on which he is to be examined.

(c) RHETORIC AND ENGLISH COMPOSITION—Candidates for Final Honors in rhetoric and English composition must satisfy the same conditions as candidates for Junior Honors, and must offer some special piece of work in connection with one of the courses open to seniors in the department. The subject of such special work in each case shall be defined by the professor in charge on or before the 1st of December; and the Honors shall be given, on special examination, to those candidates who attain grade A in the special examination without falling below grade C in any of their other courses in the department. Each candidate must also submit, on or before the 1st of May, an essay of not less than 3000 words dealing with some aspect of the subject on which he is to be examined.

(d) GERMAN—Candidates for Final Honors in the Germanic languages must have complied with the provisions of 29, and also have taken additional courses amounting to not less than four hours a week in the Germanic languages, and must not have been classed below grade B in any of them. They will be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject selected by the Professor of the Germanic Languages, and announced on or before December 1 preceding. They must also show their ability to read with ease any ordinary French.

(*c*) ROMANCE LANGUAGES—Candidates for Final Honors in Romance Languages must have complied with the provisions of 29, and also have taken additional courses in the Romance languages amounting to not less than four hours a week, and must not have been classed below grade B in any of them. They will be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject selected by the Professor of the Romance Languages and Literatures, and announced on or before December 1 preceding. They must also show their ability to read German with ease.

(*f*) LITERATURE—Candidates for Final Honors in literature may offer special work in connection with any one of the courses open to seniors in the department or of approved courses open to them in cognate departments. The subject of such special work shall be defined by the head of the department in conference with the candidate, on or before the first of December of each year, and the Honors shall be given, on examination or other written work as may in each case be determined, to those candidates who attain grade A in such special work without falling below grade C in any of their other courses.

(*g*) MATHEMATICS—Candidates for Final Honors must have complied with the provisions of 29, and also have taken at least two courses from among those offered to seniors by the department of mathematics, and at least one from among those offered by the department of astronomy; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay on some subject agreed upon by the Professors of Mathematics, Astronomy, and Mechanics, and announced on or before December 1 preceding.

(*h*) PHYSICS AND CHEMISTRY—Candidates for Final Honors must have complied with the provisions of 29, and also have taken at least one additional course in physics and at least one in chemistry; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay on some subject agreed upon by the Professors of Physics and Chemistry, and announced on or before December 1 preceding.

(*i*) BIOLOGY AND BOTANY—Candidates for Final Honors must have taken at least one course in chemistry or geology, one in botany, and three in biology; or one in chemistry or geology, one in biology, and three in botany, including laboratory work in all of the subjects; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay on some subject agreed upon by the Professors of Biology and Botany, and announced on or before December 1 preceding.

(*j*) HISTORY—Candidates for Final Honors must have complied with the provisions of 29, and also have taken at least three additional courses in history, and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay containing not less than 5000 words on some subject announced by the Professor of History on or before December 1 preceding.

(*k*) POLITICAL ECONOMY—Candidates for Final Honors must have taken Political Economy II, and must not have been classed below grade B in either that or Political Economy A. They must also have taken all the courses in

political economy and finance offered to seniors, and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Political Economy, and announced on or before December 1 preceding.

(7) PHILOSOPHY—Candidates for Final Honors must not have been classed below grade B in Philosophy A, and must have taken at least three courses from among those offered to seniors by the department of philosophy, ethics, and psychology, and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject assigned by the Professor of Philosophy, and announced on or before December 1 preceding.

### Graduation Theses

30 Each candidate for graduation shall, on or before the 15th of December, with the approval of the instructor in charge of one of the courses in which he has studied, or is studying, select for thesis, or essay, some subject connected with that course, and he shall, under such guidance and with such help as the instructor may deem it right to give him, complete the thesis, or essay, and submit it to the Dean on or before April 2 of each year. This thesis, or essay, shall be judged by the head of the department in which the chosen subject lies; and the judgment shall be passed upon the merit of the thesis, or essay, both in its substance and in its style, and shall be reported in writing by the head of the department to the Dean. In his return to the Dean upon a graduation thesis, the examining officer shall report:

1. A grade as to substance (18);
2. A grade as to style;
3. A judgment upon its merits as a whole.

Each thesis shall contain, as appendix, a list of authorities that have been used. It shall contain at least (2000) two thousand words, unless there be special reasons for the reduced length; and it shall be retained as the property of the College, in charge of the librarian.

If any student fail to comply with these requirements, or if his thesis, or essay, be rejected, he shall not be recommended to the Trustees for graduation.

The graduating theses must be written on firm, strong paper, eleven by eight and one-half inches in dimensions, and a space of one and one half-inches on the inner margin must be left free from writing.

### Honorable Dismission

31 An honorable discharge shall always be granted to any student in good standing, who may desire to withdraw from the College; but no student under the age of twenty-one years shall be entitled to a discharge without the assent of his parent or guardian, given in writing to the President.

### COURSES OF INSTRUCTION

32 An elective course may, in his discretion, be withdrawn by the Professor offering it, when it shall have been elected by fewer than three students.

**33** Special students may take any course, prescribed or elective, on the approval in writing of the Dean, to whom they must apply for admission.

**34** The following regulations are obligatory upon all students :

(a) No prescribed course can be taken as an elective.

(b) No optional course can be taken except by permission of the Dean, nor can be counted for a degree under any circumstances.

(c) Every student must have taken one course in natural science including laboratory work, before graduation.

(d) Courses in laboratory work or in drawing can be counted for only one half the number of hours actually occupied.

(e) No student can take more than four hours (except in laboratory work or in drawing) assigned to the same day, except by permission of the Dean.

(f) No student can take more than six hours in any one department except by permission of the Dean.

(g) All elective courses are taken subject to the conditions imposed by the head of the department.

(h) Any student may be excluded from an elective course on the report of the instructor to the Dean that this is advisable ; and the student shall then be required to elect some other equivalent course.

**35** No changes in elective courses can be made, except by permission of the Dean, to whom application must be made in writing with a statement of reasons.

**36** Students are required to give notice to the Dean of their choice of electives, upon blanks provided at the Dean's office, on or before September 5. They must avoid conflict of subjects at the same hour, and for that purpose should consult the hour-scheme. Students are advised to make their choice upon a settled plan, consistent with their aims in education, and especially to consult with their instructors in the subjects chosen.

**37** Students are expected to attend upon the Wednesday preceding the first Monday in October, which in 1896 falls on Wednesday, September 30, for registration and the payment of matriculation fees. Failure on the part of any student to present himself at the first hour of any elective course may be regarded as sufficient reason to exclude him therefrom ; and every student who is late in entering his elective courses will be charged with absences equal in number with the hours missed.

### Freshman and Sophomore Classes

The studies of the freshman class occupy fifteen hours a week and are all obligatory, except that a freshman must choose French or German (that one of them upon which he was examined for admission), but is not required to take both. The studies of the sophomore class require sixteen hours a week, and are all obligatory ; a student may, however, substitute chemistry, three hours a week, for any language, ancient or modern, except English.

Distribution of subjects and hours in the freshman and sophomore years :

**38** In the freshman year :

	Hours a week.		Hours a week.
Greek.....	3	Mathematics.....	3
Latin.....	3	French or German .....	3
Rhetoric.....	3		

**39** In the sophomore year :

	Hours a week.		Hours a week.
Greek.....	3	Mathematics.....	2
Latin.....	3	History .....	2
Literature.....	3	French or German.....	3

Chemistry (in place of Greek, Latin, French, or German), 3 hours.

A freshman or a sophomore who shall pass satisfactory examinations in the French and German of the first and second years, may substitute an elective course in French, German, Italian, or Spanish, on the recommendation of the head of the department.

**Junior Class**

For the studies of the junior class fifteen hours a week are required ; of these, four are for obligatory studies and eleven for elective courses.

**40** The required studies are :

	Hours a week.
History and Political Economy .....	2
Logic and Psychology .....	2

Written work in English, under the direction of the Professor of Rhetoric, is required of each junior.

**41** The elective courses open to the juniors are :

Astronomy.....	One course	Mathematics.....	Two courses
Biology.....	One course	Mechanics .....	One course
Botany.....	Two courses	Oriental Languages :	
Chemistry.....	Two courses	Hebrew.....	Two courses
English.....	Two courses	Arabic.....	One course
Geology.....	Two courses	Physics.....	Two courses
Germanic Languages :		Political Economy .....	One course
German.....	Three courses	Rhetoric and English Com-	
Scandinavian .....	One course	position .....	Three courses
Greek.....	Two courses	Romance Languages :	
History.....	One course	French.....	Four courses
Language, general introduc-		Italian.....	Three courses
tion to the study of.....	One course	Spanish.....	Two courses
Latin.....	Three courses		

**Senior Class**

**42** Seniors are required to take fifteen hours of elective courses, the following being open to them :



Astronomy.....	Four courses	Literature.....	Four courses
Biology.....	Three courses	Mathematics.....	Four courses
Botany.....	Six courses	Mechanics.....	Three courses
Chemistry.....	Three courses	Oriental Languages :	
English.....	Nine courses	Sanskrit.....	One course
Geology.....	Three courses	Iranian.....	Three courses
Germanic Languages :		Semitic.....	Five courses
German.....	Four courses	Philosophy.....	Nine courses
Gothic.....	One course	Physics.....	Eight courses
Scandinavian.....	One course	Political Economy.....	Six courses
German Philology, intro-		Rhetoric and English com-	
duction to.....	One course	position.....	Four courses
Greek.....	Eight courses	Romance Languages :	
History.....	Six courses	French.....	Ten courses
Language, introduction to		Italian.....	Four courses
study of.....	One course	Spanish.....	Three courses
Latin.....	Seven courses	Romance Philology....	One course

In addition to the above, first-year courses in the School of Law, School of Mines, and the College of Physicians and Surgeons are open to them ; and such as may desire to do so can prepare themselves for advanced standing in those schools by electing these first-year courses, as a whole or in part, and counting them for the degree of Bachelor of Arts.

NOTE.—Seniors who take the whole, or the greater part, of their studies in the College of Physicians and Surgeons, or in the School of Mines must pay a tuition fee of two hundred dollars.

43 For details as to the several courses enumerated above, see statements of the departments of instruction and special circulars of Courses in the School of Arts.

## REGISTER OF STUDENTS

(Addresses other than those in New York City are enclosed in parentheses.)

### SENIOR CLASS

NAME	RESIDENCE	CITY ADDRESS
Charles Siedler Adams	<i>Brooklyn, N. Y.</i>	(203 Hancock st.)
Bernhard Alexander	<i>New York City</i>	105 East 96th st.
Carl Lucas Alsberg	<i>New York City</i>	169 East 116th st.
John Richard Atwill	<i>Kansas City, Mo.</i>	238 West 111th st.
Rogers Hammond Bacon	<i>New York City</i>	29 East 28th st.
Edwin Atkinson Bayles	<i>Orange, N. J.</i>	(408 Main st.)
William Fenwick Beekman	<i>New York City</i>	35 West 17th st.
Edwin Beer	<i>New York City</i>	38 West 77th st.
George Philip Bryant	<i>New York City</i>	140 West 15th st.
Granville Ingraham Burr	<i>New York City</i>	513 West 144th st.
Herbert Louis Celler	<i>New York City</i>	61 West 94th st.
William Samuel Cherry	<i>New York City</i>	244 West 71st st.
David Cohn	<i>Paterson, N. J.</i>	(83 Auburn st.)
Maurice Cohn	<i>Paterson, N. J.</i>	(83 Auburn st.)
Charles du Pont Coudert	<i>Tuxedo, N. Y.</i>	70 William st.
Edward Hamilton Daly	<i>New York City</i>	19 East 62d st.
Walter Scott Dryfoos	<i>New York City</i>	22 West 69th st.
Henry Louis Austin Fick	<i>New York City</i>	44 Sixth ave.
Wells Hubert Fitch	<i>Brooklyn, N. Y.</i>	(374 Herkimer st.)
Harold Carl Geyer	<i>New York City</i>	78 Second st.
Everett Willoughby Gould	<i>New York City</i>	539 West 144th st.
Robert Hurtin Halsey	<i>Astoria, N. Y.</i>	(1000 Boulevard)
William Henry Hays	<i>New York City</i>	13 East 54th st.
Victor William Hungerford	<i>New York City</i>	121 West 69th st.
John Duer Irving	<i>New Brighton, N. Y.</i>	
Edward Thomas Johnston	<i>Newtown, N. Y.</i>	353 Third ave.
Walter Colouzzi Kretz	<i>New York City</i>	149 West 12th st.
Alfred Louis Kroeber	<i>New York City</i>	316 West 89th st.
Irving Lehman	<i>New York City</i>	5 East 62d st.
Albert Ralph Lesinsky	<i>New York City</i>	25 East 72d st.
Julian Clarence Levi	<i>New York City</i>	137 West 81st st.
Frederick Montgomery Livingston	<i>Brooklyn, N. Y.</i>	(370 Greene ave.)

NAME	RESIDENCE	CITY ADDRESS
Robert Glenn McCrea	<i>Brooklyn, N. Y.</i>	(533 Franklin ave.)
Robert Austin McCulloch	<i>New Brighton, N. Y.</i>	
Aaron Wager Maddox	<i>Brooklyn, N. Y.</i>	(669½ Quincy st.)
George Frederick Middendorf, Jr.	<i>Brooklyn, N. Y.</i>	(90 Schenck ave.)
Louis Hasbrouck Newkirk	<i>Monticello, N. Y.</i>	34 West 34th st.
Asa Warren Parker, Jr.	<i>Brooklyn, N. Y.</i>	(149 Henry st.)
Frederick Augustus Peters	<i>New York City</i>	1046 Stebbins ave.
Edwy Guthrie Pitblado	<i>New York City</i>	219 East 27th st.
William Popper	<i>Brooklyn, N. Y.</i>	(60½ Bainbridge st.)
Joseph Meyer Proskauer	<i>Mobile, Ala.</i>	116 West 136th st.
Franklin Edwin Reese	<i>Westfield, N. Y.</i>	
Isidorus Ross	<i>New York City</i>	2078 Seventh ave.
Allan Conn Rowe	<i>Brooklyn, N. Y.</i>	(550 Washington ave.)
John Wiethauper Russell	<i>New York City</i>	1965 Seventh ave.
Samuel Swayze Seward, Jr.	<i>New York City</i>	113 West 85th st.
John Hebard Snyder	<i>West Hoboken, N. Y.</i>	
David Houghtaling Taylor	<i>New York City</i>	Hotel Netherland
John Tilley, Jr.	<i>New York City</i>	Westchester
Carl Manfred Uhl	<i>New York City</i>	113 East 60th st.
John Alfred Valentine	<i>Newton, N. Y.</i>	13 St. Luke's pl.
Richard Weil	<i>New York City</i>	109 West 77th st.
Edwin Blanchard Woodruff	<i>Delhi, N. Y.</i>	244 West 42d st.
Seniors. ....		54

## JUNIOR CLASS

Richard Perrin Appleton	<i>Nutley, N. Y.</i>	
Woodward Babcock	<i>New York City</i>	21 West 49th st.
Philip Bissell	<i>New York City</i>	26 West 47th st.
Theodore Lawrence Bogert	<i>Flushing, N. Y.</i>	56 East 49th st.
Arthur Bookman	<i>New York City</i>	9 East 62d st.
Charles William Boote	<i>Yonkers, N. Y.</i>	(128 Webster ave.)
Philip Ernest Brodt	<i>Geneseo, N. Y.</i>	117 West 55th st.
Frank Hoag Brooks	<i>New York City</i>	142 West 103d st.
Eugene Carroll Brown	<i>Brooklyn, N. Y.</i>	(976 Kent ave.)
William Joseph Clarke	<i>New York City</i>	148 East 45th st.
Frederick Hassard Cluff	<i>Brooklyn, N. Y.</i>	(309 Garfield pl.)
Francis Harold Dike	<i>New York City</i>	159 West 129th st.
Walter Strong Edwards	<i>Greenwich, Conn.</i>	
Francis Bertram Elgas	<i>New York City</i>	121 West 87th st.
Charles Henry Ellard	<i>Great Neck, N. Y.</i>	
William Henry Fry	<i>Brooklyn, N. Y.</i>	(319 Ninth st.)
Seymour Keyes Fuller	<i>Brooklyn, N. Y.</i>	(77 Hanson pl.)
Benjamin Thorn Gilbert	<i>Clayville, N. Y.</i>	56 East 81st st.
Arthur Benedict Griffin	<i>New York City</i>	882 St. Nicholas ave.

# SOPHOMORE CLASS

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NAME	RESIDENCE	CITY ADDRESS
William Boone Gunton	<i>New York City</i>	64 West 77th st.
Edgar Arnold Hellman	<i>New York City</i>	200 West 44th st.
Walter Leon Hess	<i>New York City</i>	307 West 86th st.
Charles Knap Hitchcock, Jr.	<i>Bayonne, N. J.</i>	
Bernard Michael Kaplan	<i>New York City</i>	428 East 72d st.
Arthur Lee	<i>Brooklyn, N. Y.</i>	(122 Amity st.)
Stephen Lindenfesler	<i>New York City</i>	391 East 10th st.
John Henry Lyon	<i>Milburn, N. J.</i>	21 Park row
Samuel Wilkinson Maguire	<i>Meriden, Conn.</i>	37 East 50th st.
Arthur Lockett Marvin	<i>New York City</i>	332 West 58th st.
Burdette Kellogg Marvin	<i>New York City</i>	332 West 58th st.
Edward Gibbs Merrill	<i>New York City</i>	147 West 12th st.
Nathan Olcott Petty	<i>Riverhead, N. Y.</i>	
John Hill Prentice	<i>Brooklyn, N. Y.</i>	(170 Columbia Heights.)
Reginald William Pressprich	<i>New York City</i>	416 West 146th st.
Albert William Putnam	<i>New York City</i>	16 West 77th st.
Herman Francis Senftner	<i>New York City</i>	108 West 136th st.
Robert Willis Shearman	<i>Long Island City, N. Y.</i>	(398 Van Pelt st.)
Walter Conwell Shoup	<i>New York City</i>	120 West 82d st.
Oliver Smith	<i>New York City</i>	460 West 44th st.
Eugene Edward Spiegelberg	<i>New York City</i>	156 West 44th st.
Arthur Barnett Spingarn	<i>New York City</i>	118 East 58th st.
Ernest William Stratmann	<i>Brooklyn, N. Y.</i>	(722 Fourth ave.)
Morris Lincoln Strauss	<i>College Point, N. Y.</i>	
Edwin Platt Tanner	<i>Paterson, N. J.</i>	(80 Pearl st.)
George Wilson Wharton	<i>Brooklyn, N. Y.</i>	(504 Clinton ave.)
Charles Frederic Wheaton	<i>Yonkers, N. Y.</i>	(224 Buena Vista ave.)
Juniors.....		46

# SOPHOMORE CLASS

George Alonzo Acken	<i>Haworth, N. J.</i>	2 West 14th st.
Julius Alsberg	<i>New York City</i>	169 East 116th st.
Ellery Oswald Anderson	<i>New York City</i>	141 East 34th st.
Morton Knight Averill	<i>New York City</i>	7 West 120th st.
Armitage Bradley	<i>New York City</i>	115 West 91st st.
Lucius Constant Bulkley	<i>New York City</i>	4 East 37th st.
Charles Clinton Burke, Jr.	<i>New York City</i>	17 East 55th st.
Howard Masten Cannon	<i>Brooklyn, N. Y.</i>	(670 Macon st.)
Robert Jermain Cole	<i>Passaic, N. J.</i>	(25 Howe ave.)
Harry Randel Cook	<i>Orange, N. J.</i>	(99 Heywood ave.)
Frank Holmes Curry	<i>New Brighton, N. Y.</i>	(Fort pl.)
John Woodbridge Demarest	<i>Queens, N. Y.</i>	
Frank Depew	<i>New York City</i>	150 West 121st st.
Arthur Brill de Young	<i>New York City</i>	805 Lexington ave.

NAME	RESIDENCE	CITY ADDRESS
Charles Hebard Edwards	<i>Greenwich, Conn.</i>	
Lewis David Einstein	<i>New York City</i>	39 West 57th st.
Addison Ely, Jr.	<i>Rutherford, N. J.</i>	
Leo Fishel	<i>Babylon, N. Y.</i>	
Harry Louis Haas	<i>New York City</i>	383 West End ave.
Stephen Higginson, Jr.	<i>New York City</i>	222 Fifth ave.
Edwin Taylor Iglehart	<i>New York City</i>	106 East 86th st.
Ernest Iselin	<i>New York City</i>	9 East 26th st.
George Richard Jacobus	<i>Yonkers, N. Y.</i>	
Frederick Paul Keppel	<i>New York City</i>	239 East 17th st.
Edwin Marks La Roche	<i>Brooklyn, N. Y.</i>	32 Vesey st.
Ernst Gustav Lemcke	<i>Astoria, N. Y.</i>	
Maxwell Lester	<i>Brooklyn, N. Y.</i>	(69 First pl.)
Walter Bertrand Merriam	<i>New York City</i>	143 West 43d st.
John Fulton Berrien Mitchell, Jr.,	<i>Flushing, N. Y.</i>	
Stuyvesant Fish Morris, Jr.	<i>New York City</i>	16 East 30th st.
Albert Sydney Morrow	<i>New York City</i>	66 West 40th st.
Robert King Morse	<i>Nyack, N. Y.</i>	
Ferdinand Van Sicien Parr	<i>Brooklyn, N. Y.</i>	(111 Ross st.)
Robert Low Pierrepont	<i>Brooklyn, N. Y.</i>	(216 Columbia Heights)
Ralph Brouwer Pomeroy	<i>Nyack, N. Y.</i>	
Henry Thomas Randall	<i>Summit, N. J.</i>	
Gerard Roberts	<i>Brooklyn, N. Y.</i>	(59 Seventh ave.)
William Charles Sandy, Jr.	<i>Newark, N. J.</i>	(374 High st.)
Charles Chapin Sargent, Jr.	<i>New York City</i>	29 East 73d st.
Anselm Edwin Schaff	<i>Merrick, N. Y.</i>	15 East 43d st.
Jacob Smith Schlusell	<i>New York City</i>	37 West 74th st.
Henry William Schwartz	<i>Bloomfield, N. J.</i>	(189 Midland ave.)
George Washington Senftner	<i>New York City</i>	108 West 136th st.
Paul Shimon	<i>Oroomiah, Persia</i>	147 West 46th st.
Nathan Stern	<i>New York City</i>	448 West 43d st.
Randall Hoyt Stern	<i>New York City</i>	252 West 131st st.
William Bittle Symmes, Jr.	<i>New York City</i>	2088 Seventh ave.
Alvan Alonzo Tenney	<i>Brooklyn, N. Y.</i>	(582 Bedford ave.)
Stallo Vinton	<i>New Rochelle, N. Y.</i>	(99 Centre ave.)
Martin Heyman Vogel	<i>New York City</i>	56 East 80th st.
Western Wesley Wager	<i>Brooklyn, N. Y.</i>	(463 Classon ave.)
Jesse Watson, Jr.	<i>Brooklyn, N. Y.</i>	(263 Hancock st.)
William Minten Weaver, Jr.	<i>New York City</i>	78 West 54th st.
Faneuil Suydam Weisse	<i>New York City</i>	46 West 20th st.
William Rogers Westerfield	<i>New York City</i>	109 West 123d st.
Jonathan Dunham Wilson, Jr.	<i>Newburg, N. Y.</i>	(26 South Miller st.)
Samuel Copp Worthen	<i>Corinna, Me.</i>	311 West 44th st.
Franklin Zeiger	<i>Montclair, N. J.</i>	(138 Park st.)
Alexander Henry William Zerban	<i>New York City</i>	334 Lenox ave.
Sophomores.....		59



## FRESHMAN CLASS

NAME	RESIDENCE	CITY ADDRESS
Charles Adkins Baker	<i>New York City</i>	294 Manhattan ave.
Franklin Alden Batcheller	<i>New York City</i>	37 Fifth ave.
Hubert James Blauvelt Belcher	<i>Haledon, N. J.</i>	
Hugh McCulloh Birkhead	<i>Newport, R. I.</i>	954 Eighth ave.
Harold Hosford Bowman	<i>Montclair, N. J.</i>	38 Park row
William Aspenwall Bradley	<i>New York City</i>	683 East 138th st.
William Warren Bross	<i>Montclair, N. J.</i>	
Ernest Abraham Cardozo	<i>New York City</i>	45 East 65th st.
Willard Case	<i>Plainfield, N. J.</i>	
Walter Nicholas Clapp	<i>Hempstead, N. Y.</i>	
Harrison Clark, Jr.	<i>New York City</i>	318 West 82d st.
William Butler Corning	<i>Palmyra, N. Y.</i>	120 West 94th st.
Edward Kurtz Crook	<i>New York City</i>	144 East 30th st.
Frederic Ashton de Peyster	<i>New York City</i>	7 East 42d st.
Edward Livingston de Rose	<i>Easthampton, N. Y.</i>	117 Madison ave.
William Archelaus De Witt	<i>New York City</i>	133 West 78th st.
Sumner Deane	<i>New York City</i>	48 West 59th st.
Henry Cameron Eldert	<i>Brooklyn, N. Y.</i>	(296½ Lafayette ave.)
Charles Howard Elmer	<i>New York City</i>	189 Lenox ave.
William King Fisher	<i>New York City</i>	524 West 142d st.
George Phelps Fort	<i>Brooklyn, N. Y.</i>	(111 Decatur st.)
Hugh Molleson Foster	<i>New York City</i>	16 East 31st st.
Jay Stanley Foster	<i>New York City</i>	54 Irving pl.
Arthur Alexander Fowler	<i>New York City</i>	60 East 68th st.
Goelet Gallatin	<i>New York City</i>	670 Fifth ave.
Irving Giffin	<i>Orange, N. J.</i>	(311 Lincoln ave.)
Horace Cutler Graves	<i>Brooklyn, N. Y.</i>	(278 McDonough st.)
George Greer	<i>Rye, N. Y.</i>	
Frank Sutliff Hackett	<i>New York City</i>	164 West 83d st.
John Smith Harrison	<i>Orange, N. J.</i>	(72 William st.)
George Sidney Hellman	<i>New York City</i>	200 West 44th st.
Otto Hellmuth Hinck	<i>Montclair, N. J.</i>	
Frederic William Hinrichs, Jr.	<i>Brooklyn, N. Y.</i>	(149 Congress st.)
George Gallagher Hopkins, Jr.	<i>Brooklyn, N. Y.</i>	(350 Washington ave.)
Darwin Shaw Hudson	<i>Astoria, N. Y.</i>	(157 Franklin st.)
Oscar Clark Huntton	<i>Paterson, N. J.</i>	(590 East 25th st.)
Sidney Louis Josephthal	<i>New York City</i>	30 East 62d st.
William Lesem	<i>New York City</i>	18 East 66th st.
Oscar Richard Lichtenstein	<i>Brooklyn, N. Y.</i>	(132 Amity st.)
Eugene Joseph McCarthy	<i>Troy, N. Y.</i>	43 East 41st st.
James Lester McCloud	<i>New York City</i>	1389 Lexington ave.
Walter Langdon McDermott	<i>Jersey City, N. J.</i>	(558 Pavonia ave.)
John Marcus	<i>Jersey City, N. J.</i>	(100 Danforth ave.)
John Purroy Mitchel	<i>New York City</i>	29 West 113th st.

NAME	RESIDENCE	CITY ADDRESS
Miles Rees Moffatt <sup>1</sup>	<i>Mamaroneck, N. Y.</i>	
Charles Moran	<i>New York City</i>	44 West 39th st.
Eugene Franklin O'Connor, Jr.	<i>Brooklyn, N. Y.</i>	(428 Clermont ave.)
Geoffrey Parsons	<i>Hempstead, N. Y.</i>	
Theophilus Parsons	<i>Hempstead, N. Y.</i>	
James Duane Pell	<i>New York City</i>	13 East 29th st.
Garrett Chatfield Pier	<i>Springfield Centre, N. Y.</i>	221 West 57th st.
Walter Henry Price	<i>New York City</i>	113 West 75th st.
Lothrop Randolph	<i>New York City</i>	Mount St. Vincent
Ernest Chapin Ropes	<i>Brooklyn, N. Y.</i>	(125 Willow st.)
Henry Spaulding Schley	<i>New York City</i>	1 East 42d st.
James Montfort Schley, Jr.	<i>New York City</i>	1 East 42d st.
Henry Alfred Schroeder	<i>New York City</i>	130 East 17th st.
Montgomery Schuyler, Jr.	<i>New York City</i>	1025 Park ave.
Alexis Eugene Senftner	<i>New York City</i>	108 West 136th st.
Edgar Sergeant	<i>New York City</i>	425 West End ave.
Frederic Kimber Seward	<i>New York City</i>	113 West 85th st.
Prescott Alfriend Sherer	<i>Hempstead, N. Y.</i>	
Eugene Sichel	<i>New York City</i>	146 West 80th st.
Richard Gordon Simpson	<i>Plainfield, N. J.</i>	(933 Watchung ave.)
Harvey Shattuck Slade	<i>Yonkers, N. Y.</i>	(95 Woodworth ave.)
Henry Capen Staunton	<i>New York City</i>	133 West 129th st.
George Henry Striker	<i>New York City</i>	84 Lexington ave.
Charles Henry Tuttle	<i>New York City</i>	218 West 46th st.
Warren Mersereau Van Name	<i>Tottenville, N. Y.</i>	
Webster Wagner	<i>Brooklyn, N. Y.</i>	(64 Macon st.)
Hans William Zinsser	<i>New York City</i>	247 West 69th st.
Freshmen.....		71

#### UNIVERSITY STUDENTS TAKING ONE COURSE OR MORE IN THE SCHOOL OF ARTS

Clarence Randolph Freeman	<i>New York City</i>	75 West 85th st.
From the Law School		
Joseph Whitney Ganson	<i>New York City</i>	47 West 33d st.
From the Law School		
Henry Grah Hershfield	<i>Helena, Montana</i>	41 East 67th st.
From the Law School		
Harry Partridge Keith	<i>Hempstead, N. Y.</i>	
From the Law School		
Leonard Jerome Obermeier	<i>New York City</i>	220 East 48th st.
From the Law School		
Frank John Smith	<i>Caldwell, Idaho</i>	149 East 47th st.
From the Law School		

NAME	RESIDENCE	CITY ADDRESS
Ansel Augustus Tyler	<i>Easton, Pa.</i>	132 East 54th st.
From the School of Pure Science		
Henry L. Weil		42 West 70th st.
From the School of Political Science		
Total.....		8

## SPECIAL STUDENTS NOT CANDIDATES FOR A DEGREE

John Douglas Alden	<i>Orange, N. J.</i>	(419 Centre st.)
Milton Dave Bachrach	<i>New York City</i>	1913 Madison ave.
Samuel Adams Warner Baltazzi	<i>New York City</i>	16 East 40th st.
Thomas William Beach	<i>Columbus, Ga.</i>	(16 Garden pl., Brooklyn)
Nathan Isaac Bijur	<i>New York City</i>	46 East 73d st.
Samuel Henry Bijur	<i>New York City</i>	46 East 73d st.
Franklin Bullwinkle	<i>Brooklyn, N. Y.</i>	(433 Franklin ave.)
Henry Clews, Jr.	<i>New York City.</i>	9 West 34th st.
Ernest Warren Davenport	<i>Yonkers, N. Y.</i>	
George Ehret, Jr.	<i>New York City</i>	1197 Park ave.
Lewis Einstein	<i>New York City</i>	44 West 53d st.
Louis Fitzgerald, Jr.	<i>New York City</i>	253 Lexington ave.
Charles Tuller Garland	<i>Bar Harbor, Me.</i>	259 Madison ave.
Frederick Forrest Goodman	<i>New York City</i>	131 West 103d st.
Arthur Romeyn Gray	<i>New York City</i>	47 West 48th st.
Addison Garthwaite Hanan	<i>Brooklyn, N. Y.</i>	(86 Eighth ave.)
Augustin Snow Hart	<i>Brooklyn, N. Y.</i>	320 Pearl st.
Henry Edward Keller	<i>Weehawken, N. J.</i>	
William Goadby Loew	<i>New York City</i>	25 West 57th st.
George Matthew	<i>St. John, N. B.</i>	509 Amsterdam ave.
Harry Augustus Miller	<i>New York City</i>	232 West 45th st.
William Setzer Ottmann	<i>New York City</i>	38 West 73d st.
Ralph Gooding Packard, Jr.	<i>Brooklyn, N. Y.</i>	(84 Columbia Heights)
Henry Evelyn Pierrepont, Jr.	<i>Brooklyn, N. Y.</i>	(216 Columbia Heights)
Ernest Irving Price	<i>New Rochelle, N. Y.</i>	(Rochelle Park)
Alonzo Clark Robinson	<i>New York City</i>	23 East 21st.
James Edward Roderick	<i>Hazleton, Pa.</i>	738 East 138th st.
William Seward Shanahan	<i>Brooklyn, N. Y.</i>	(17 Prospect pl.)
Ernest Wetherill Wood	<i>Flushing, N. Y.</i>	23 West 26th st.
Henry Mingle Young	<i>Pluckamin, N. J.</i>	350 West 56th st.
Total.....		30

## SUMMARY

Seniors.....	54
Juniors.....	46
Sophomores.....	59
Freshmen.....	71
Special students not candidates for a degree.....	30

Students registered in the School of Arts.....	260
University students taking one or more courses.....	8

Total..... 268

## SCHOOL OF LAW

### Officers of the Faculty

WILLIAM A. KEENER, LL.D.....*Dean, and Ex-Officio Member of the  
University Council*  
GEORGE W. KIRCHWEY, A.B.....*Secretary*  
FRANCIS M. BURDICK, LL.D.....*Elected Delegate to the  
University Council*

### Faculty

SETH LOW, LL.D., *President*

WILLIAM A. KEENER, LL.D., *Kent Professor of Law, and Dean*  
GEORGE M. CUMMING, A.B., *Professor of Law*  
FRANCIS M. BURDICK, LL.D., *Dwight Professor of Law*  
GEORGE W. KIRCHWEY, A.B., *Professor of Law*  
\* HENRY P. STARBUCK, A.B., LL.B., *Professor of Law*  
GEORGE F. CANFIELD, A.B., LL.B., *Professor of Law*

### From the Faculty of Political Science †

JOHN W. BURGESS, Ph.D., LL.D., *Professor of History, Political Science, and  
Constitutional Law*  
MUNROE SMITH, A.M., J.U.D., *Professor of Roman Law and Comparative  
Jurisprudence*  
FRANK J. GOODNOW, A.M., LL.B., *Professor of Administrative Law*  
JOHN B. MOORE, A.B., *Hamilton Fish Professor of International Law and  
Diplomacy*

### Lecturers

JOHN ORDRONAU, LL.D., *Professor of Medical Jurisprudence*  
HERBERT NOBLE, A.M., LL.B., *Lecturer on Procedure in Equity and under  
the Code*

### Prize Lecturer

DAVID BANDLER, A.B., LL.B.

\* Absent on leave.

† Some of the courses leading to the degree of Bachelor of Laws conferred on the recommendation of the Faculty of Law, are conducted by the above-named Professors in the Faculty of Political Science.

## PURPOSES OF THE SCHOOL

The design of the School is to prepare students for practice in any State of the Union, and in furtherance of this object the endeavor is made to give a thorough, practical, and scientific education in the principles of the law included in the following subdivisions :

First.—The COMMON LAW, in its development and as it exists to-day in the United States, together with such statutory modifications as are generally in force in the several States.

Second.—EQUITY, in its development and as it exists to-day in the United States.

Third.—The LAW of the STATE OF NEW YORK, including PRACTICE and PLEADING under the CODE of CIVIL PROCEDURE, and the doctrines of substantive law peculiar to that State in regard to Trusts of Real and Personal Property, Powers, Perpetuities, Charitable Bequests, Accumulations, Limitation of Future Estates, Descent and Distribution, Mortgages and Contracts.

Fourth.—The PUBLIC LAW of the UNITED STATES, and the principal EUROPEAN COUNTRIES, including CONSTITUTIONAL LAW, ADMINISTRATIVE LAW, and INTERNATIONAL LAW.

Fifth.—COMPARATIVE JURISPRUDENCE, ROMAN LAW, and the HISTORY of EUROPEAN LAW.

## COURSE OF INSTRUCTION

The course of instruction leading to the degree of Bachelor of Laws covers a minimum period of three years, in which there are offered sixty-four hours of instruction per week throughout the year. In the first year are offered fourteen hours of instruction per week ; in the second year twenty-seven hours of instruction per week ; in the third year twenty-three hours of instruction per week.

The degree of Bachelor of Laws is conferred only upon students who have passed satisfactory examinations in courses covering a total of forty-two hours.

To obtain this degree in three years the student must, ordinarily, take courses covering fourteen hours per week in each of the three years.

While no student will be allowed, without the consent of the Faculty, to present himself for examination in any one year in subjects covering more than the number of hours above named, any one desiring to prolong the period of study for the degree of LL.B. beyond three years, will be permitted to reduce thereby the amount of work in any one year necessary for the degree. The Faculty would strongly advise students who have not had an opportunity of thoroughly studying History, Economics, and Finance, so to prolong their course of study in order that they may avail themselves of the opportunity offered in the School of Political Science for studying these subjects. For the courses offered by the University Faculty of Political Science in these subjects see page 164.

The work selected by a student for a degree in law is subject in every case to the approval of the Dean.



## First Year

ELEMENTS OF JURISPRUDENCE\*—2 hours per week. Professor KEENER

EQUITY\*—The Origin and Nature of Equity, Bills of Peace, Interpleader, Quia Timet, Removal of Cloud upon Title, the Jurisdiction of Equity over Torts—2 hours per week. Professor KEENER

CONTRACTS—3 hours per week. Professor CUMMING

REAL AND PERSONAL PROPERTY—3 hours per week. Professor KIRCHWEY

TORTS—2 hours a week. Professor BURDICK

CRIMINAL LAW AND PROCEDURE—2 hours per week. Professor MOORE

LAW OF PERSONS AND DOMESTIC RELATIONS\*—2 hours per week. Professor CUMMING

COMMON LAW PLEADING AND PRACTICE\*—2 hours per week. Professor CUMMING

The instruction in Equity is based on Keener's Cases on Equity Jurisdiction. The instruction in Contracts in both the first and second years is confined to the consideration of pure contracts, or the principles involved in the formation, performance, and discharge of contract obligations, and is based in the first year on Keener's Selections on Contracts. The instruction in Real and Personal Property in the first year is based on Digby's History of the Law of Real Property and Gray's Cases on Property; in Criminal Law and Procedure, on Beale's Cases on Criminal Law; in Torts, on Pollock on Torts, and Burdick's Cases on Torts; in the Law of Persons and Domestic Relations, on Ewell's Cases on Domestic Relations (student's edition); in Common Law Pleading and Practice, on Stephen on Pleading and Ames's Cases on Pleading.

## Second Year

CONTRACTS AND QUASI-CONTRACTS—3 hours per week. Professors CUMMING and KEENER

EQUITY—The Jurisdiction of Equity over Torts; Trusts—2 hours per week. Professor KEENER

REAL AND PERSONAL PROPERTY—3 hours per week. Professor KIRCHWEY

ADMINISTRATIVE LAW—2 hours per week. Professor GOODNOW

AGENCY—2 hours per week. Professor CANFIELD

BAILMENTS AND CARRIERS—2 hours per week. Mr. BANDLER

COMPARATIVE CONSTITUTIONAL LAW—3 hours per week. Professor BURGESS

INSTITUTES OF ROMAN LAW—2 hours per week. Professor SMITH

\* The courses in Jurisprudence and Equity are together the equivalent of two hours a week through the year. The Study of Equity is not begun until the completion of the course in Jurisprudence. The instruction in the Law of Persons and Domestic Relations is given from October to February; in Common Law Pleading and Practice, from February to June. When not otherwise stated, the course of instruction in any given subject extends through the year.

NEGOTIABLE PAPER—2 hours per week. Professor BURDICK

SALES OF PERSONAL PROPERTY—2 hours per week. Professor BURDICK

CODE PRACTICE\*—2 hours per week. Mr. NOBLE

EQUITY PLEADING AND PRACTICE\*—2 hours per week. Mr. NOBLE

The course on Quasi-Contracts is based on Keener's Cases on Quasi-Contracts and treats of rights arising independently of either Tort or Contract, as the recovery of money paid under duress, under compulsion of law, or under mistake; waiver of tort; the right to recover independently of contract for services rendered, and the right to recover for benefits conferred under an unenforceable contract. The instruction in Equity is based on Keener's Cases on Equity Jurisdiction and Ames's Cases on Trusts. In the course on Administrative Law are considered the organization of administrative authorities; their methods of action and the control exercised over them by the Legislature and the Courts, particularly through the issue of the writs of mandamus, prohibition, certiorari, habeas corpus, and quo warranto. In the course on Code Practice students are required to prepare the principal papers required in practice under the Code. The course in Equity Pleading and Practice is given with special reference to the Equity Procedure of the Federal Courts of the United States, students being required to prepare the pleadings and other papers incident to a suit in equity. The instruction in Real and Personal Property is based on Gray's Cases on Property; in Agency, on Wambaugh's Cases on Agency; in Bailments and Carriers, on McClain's Cases on Carriers.

### Third Year

CORPORATION—2 hours per week. Professor CUMMING

EQUITY—Trusts; the Jurisdiction of Equity over Contracts, including the specific performance, reformation, and rescission thereof; Account, Equitable Conversion—2 hours per week. Professor KEENER

EVIDENCE—2 hours per week. Professor CANFIELD

INTERNATIONAL LAW—2 hours per week. Professor MOORE

COMPARATIVE JURISPRUDENCE—2 hours per week. Professor SMITH

PARTNERSHIP—2 hours per week. Professor BURDICK

CODE PLEADING AND PRACTICE—2 hours per week. Mr. NOBLE

SURETYSHIP AND MORTGAGE—2 hours per week. Mr. NOBLE and Mr. BANDLER

WILLS AND ADMINISTRATION—2 hours per week. Professor KIRCHWEY

INSURANCE†—2 hours per week. Mr. BANDLER

\* The instruction in Code Practice is given from February to June; in Equity Pleading and Practice from October to February. When not otherwise stated the course of instruction in any given subject extends through the year.

† The instruction in Insurance is given from February to June. When not otherwise stated, the instruction in any given subject extends through the year. The course in Insurance will not be given in 1895-96.

CONFLICT OF PRIVATE LAW—1 hour per week. Professor SMITH

MUNICIPAL CORPORATIONS \*—2 hours per week. Professor GOODNOW

LAW OF TAXATION \*—2 hours per week. Professor GOODNOW

DOCTRINES PECULIAR TO NEW YORK LAW—1 hour per week. Professor CANFIELD

COURSES IN THE SECOND YEAR NOT OFFERED FOR THE DEGREE DURING THAT YEAR AND OPEN TO THIRD-YEAR STUDENTS AS PART OF THEIR WORK FOR THE DEGREE—10 hours per week

The instruction in Equity is based on Ames's Cases on Trusts, and Keener's Cases on Equity Jurisdiction. In the course on Code Pleading, students are required to prepare pleadings, and the other principal papers necessary under the Code. The instruction in Corporations is based on Cumming's Cases on Private Corporations; in Evidence, on Thayer's Cases on Evidence; In Insurance, on Richards on Insurance; in Negotiable Paper, on Ames's Cases on Bills and Notes; in Partnership, on Ames's Cases on Partnership; in Wills and Administration, on Gray's Cases on Property.

### Moot Courts

Moot Courts are held during the academic year, open only to members of the second- and third-year classes.

### Courses Recommended to Law Students Though not Accepted for the Degree of LL.B.

CONSTITUTIONAL HISTORY OF EUROPE—3 hours per week for the first term. Professor OSGOOD

CONSTITUTIONAL HISTORY OF THE UNITED STATES—3 hours per week for the second term. Professor BURGESS

CONSTITUTIONAL HISTORY OF ENGLAND—2 hours a week. Professor OSGOOD

HISTORICAL AND PRACTICAL POLITICAL ECONOMY—3 hours per week. Professor MAYO-SMITH

TAXATION AND FINANCE—2 hours per week. Professor SELIGMAN

RAILROAD PROBLEMS—3 hours per week. Professor SELIGMAN

HISTORY OF POLITICAL THEORIES—3 hours per week for the first term. Professor DUNNING

MEDICAL JURISPRUDENCE—3 hours per week, from October to January. Professor ORDRONAU

### Requirements for Admission

All applicants for admission must be of good moral character.

Applicants for admission are divided into two classes—those who are and those who are not candidates for the degree of Bachelor of Laws.

\* The instruction in Municipal Corporations is given from October to February; in the Law of Taxation, from February to June. When not otherwise stated, the instruction in any given subject extends through the year.

Candidates for admission to the first-year class at its formation must be at least eighteen years of age, and of a corresponding increase of age for admission to advanced standing.

Graduates of colleges and scientific schools in good standing, and all persons who have received the academic diploma of the Regents of the State of New York, or who have received the Regents' fifty-count certificate, or a certificate acceptable to the Regents in lieu thereof, are admitted without examination. Students who have passed forty counts under the Regents will be allowed to enter the school as candidates for the degree of LL.B., but such students must obtain the remaining ten counts during the academic year as a condition for continuing in the school as candidates for said degree.

All other candidates, except seniors in the School of Arts, must pass the examination required for admission to the freshman class of the School of Arts, an equivalent amount of French and German being accepted as a substitute for Latin and Greek.

Applicants qualifying as candidates for the degree by presenting the Regents' fifty-count certificate,\* or a certificate acceptable to the Regents in lieu thereof, or by passing the examination for admission to the freshmen class of the School of Arts, will be required, if entering the second-year class, to produce evidence of having qualified at least one year prior thereto; if entering the third-year class, to produce evidence of having qualified two years prior thereto.

Every applicant for advanced standing must pass satisfactory examinations in the work of the first year to be admitted to the second year, and in the work of the first year and in fourteen hours of the second year to be admitted to the third year. No certificate or diploma will be accepted in lieu of these examinations for advanced standing.

### Special Students

Applicants who are not candidates for a degree are admitted without a preliminary examination, and may, subject to the approval of the Dean, pursue such courses of study as they select. Such students will be classified as special students.

Special students must present themselves for examination in each subject selected by them at the first examination held therein, and must pass satisfactory examinations in a majority of the subjects, as a condition of continuing in the school.

### Examinations

Written examinations are held at the end of each year on the subjects of that year, and during the week preceding the first Monday in October.

\* The word count is used by the Regents to represent the numerical value attaching to any given subject, and to obtain a fifty-count certificate one must pass satisfactory examinations in subjects aggregating fifty (50) numerically.

The list of subjects from which the fifty counts may be selected and an announcement of the time and place where the Regents' examinations are held, may be had on application to the Registrar of the School of Law.

No student is admitted to advanced standing who has failed to pass satisfactory examinations in more than four hours of work per week. Any student failing in the final examination held at the end of the academic year, may present himself for examination a second time during the last week of the summer vacation. No student failing a third time in any given subject will be allowed to continue in the school.

No special examinations are given.

### Library

Every facility is given to students to make use of the Law Library containing about 25,000 volumes, and of the general Library, containing about 215,000 volumes.

The Library is open for use from 8:30 A.M. to 11 P.M., every secular day in the year except holidays.

### Admission to the Bar

An office clerkship is no longer required of applicants for admission to the New York Bar.

While the course of study leading to the degree of LL.B. covers a period of three years, college graduates who have been in regular attendance upon the lectures and exercises of this school for two years after receiving their college degree, are entitled to apply for admission to the New York Bar at the end of their second year of study. Students who are not college graduates are entitled to apply for admission to the New York Bar at the end of their third year of regular attendance upon the lectures and exercises of this school.

In New Jersey, eighteen months spent in this school is regarded as the equivalent for a like period of clerkship in a lawyer's office.

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For further information address the Dean of the School of Law.



## REGISTER OF STUDENTS

(Addresses other than those in New York City are enclosed in parentheses)

### GRADUATE STUDENT

NAME	RESIDENCE	CITY ADDRESS
James Murray Sanderson, LL.B. (C.)	<i>New York City</i>	11 East 46th st.
Post-Graduate Students.....I		

### THIRD YEAR

Paul Armitage, A.B. (C.)	<i>New York City</i>	395 Church st.
Berkeley Clarence Austin, A.B. (C. C.)	<i>Cranford, N. J.</i>	
Shelley Fowler Austin	<i>Cranford, N. J.</i>	
William Thomas Aycock A.B. (U. S. C.)	<i>Wedgfield, S. C.</i>	
Harry Samuel Bandler, A.B. (Y.)	<i>Owego, N. Y.</i>	212 Edgecombe ave.
Solomon Charles Bernstein, B.S. (C. C.); A.M. (C.)	<i>New York City</i>	104 East 81st st.
Russell Ely Burke, A.B. (C.)	<i>New York City</i>	17 East 55th st.
John Francis Carew, A.B. (C.)	<i>New York City</i>	225 East 58th st.
Thomas Ives Chatfield, A.B. (Y.)	<i>New York City</i>	173 Fifth ave.
Solomon A. Cohn, A.B. (C. C.)	<i>New York City</i>	154 East 70th st.
Joseph Jacob Corn	<i>New York City</i>	23 East 128th st.
Sidney Clinton Crane	<i>Plainfield, N. J.</i>	72 West 49th st.
William Beers Crowell	<i>New York City</i>	1044 Fifth ave.
Eugene Howell Daly, A.B. (C.)	<i>New York City</i>	170 Broadway
Lee Sumner Day	<i>Elyria, O.</i>	601 Lexington ave.
Archibald Douglas	<i>Tarrytown, N. Y.</i>	113 West 40th st.
John G. Dunbar	<i>Brooklyn, N. Y.</i>	(940 Pacific st.)
William C. Dunbar	<i>Brooklyn, N. Y.</i>	(940 Pacific st.)
Horatio Seymour Eisman, A.B. (C. C.); A.M. (C.)	<i>New York City</i>	124 East 74th st.
Hermann George Friedmann, B.S. (C. C.); A.M. (C.)	<i>New York City</i>	922 East 138th st.
Charles Henry George	<i>New York City</i>	110 and 112 West 39th st.
Otto Theodore Hess, A.B. (C.)	<i>New York City</i>	307 West 86th st.
Harry Mason Hewitt	<i>New York City</i>	261 East 78th st.
Walter Baylis Hopping	<i>Hanover, N. J.</i>	72 West 49th st.
James C. Howell, A.B. (C.)	<i>Highland Mills, N. Y.</i>	

NAME	RESIDENCE	CITY ADDRESS
Harold Hurd	<i>Dorchester, Mass.</i>	13 East 46th st.
Edwin James Johnson	<i>Richfield Spa, N. Y.</i>	7 Fifth ave.
Edward Renshaw Jones, A.B. (H. U.)	<i>New York City</i>	20 North Washington sq.
William C. B. Kemp	<i>New York City</i>	751 Fifth ave.
Francis Corey Keyes, A.B. (G.)	<i>San Francisco, Cal.</i>	110 East 30th st.
Harvey Roberts Kingsley, A.B. (C.)	<i>Rutland, Vt.</i>	588 Fifth ave.
Arthur Charles Klettsch, A.B. (C.)	<i>Milwaukee, Wis.</i>	117 West 48th st.
William R. A. Koehl, A.B. (N. W. C.)	<i>New York City</i>	578 Lexington ave.
Edgar Julius Kohler, A.B. (C. C.)	<i>New York City</i>	115 East 71st st.
Henry M. Levin, B.S. (C. C.)	<i>New York City</i>	317 East 79th st.
Louis Levy, A.B. (C. C.)	<i>New York City</i>	816 Lexington ave.
Edward Livingston, Jr., A.B. (H. U.)	<i>New York City</i>	17 East 74th st.
Campbell Erie Locke, A.B. (C.)	<i>New York City</i>	23 West 53d st.
Charles Edward Francis McCann, Ph.B. (S. X.)	<i>New York City</i>	Hotel Lincoln
Cornelius Patrick McIntyre, A.B. (S. H.)	<i>Montgomery, Ala.</i>	175 Lexington ave.
Robert Valentine Mathews	<i>Brooklyn, N. Y.</i>	(222 Schermerhorn st.)
Robert Mickle Miles, Jr., A.B. (Se. H.)	<i>So. Orange, N. J.</i>	16 and 18 Exchange pl.
Frederick Felix Neuman, A.B. (C.)	<i>New York City</i>	604 Lexington ave.
Sheridan Shook Norton, A.M. (S. X.)	<i>New York City</i>	161 West 71st st.
James F. O'Beirne, A.M. (S. X.)	<i>New York City</i>	201 East 20th st.
Charles Rogers Pelgram	<i>New York City</i>	337 West 88th st.
Edward Anson Prentice	<i>Portage, N. Y.</i>	65 East 61st st.
George Ross	<i>New York City</i>	128 West 132d st.
Frederick H. Sanborn, A.B. (P. I.)	<i>Brooklyn, N. Y.</i>	(13 Spencer pl.)
George J. Schleicher	<i>Cuero, Tex.</i>	111 West 49th st.
Peter Schmuck, B.S. (C. C.) ; A.M. (C.)	<i>New York City</i>	325 West 39th st.
Edward Samuel Seidman, A.B. (B. C.)	<i>New York City</i>	649 Lexington ave.
Oscar Roland Seitz, A.B. (C.)	<i>New York City</i>	150 West 120th st.
Francis Raymond Stark, A.M. (S. X.)	<i>New York City</i>	30 West 51st st.
Robert William Thompson, Jr., A.B. (C. C.) ; A.M. (C.)	<i>New York City</i>	229 West 97th st.
Henry Ayres Uterhart, A.B. (C.)	<i>New York City</i>	552 East 85th st.
Edward Le Clerc Vogt, Jr.	<i>Morristown, N. J.</i>	
Sampson Herbert Weinhandler, A.B. (C. C.)	<i>New York City</i>	319 East 17th st.
Lewis Morris White	<i>Binghamton, N. Y.</i>	321 East 42d st.
Samuel Lee Wolff, A.B. (H. U.) ; A.M. (C.)	<i>New York City</i>	125 East 73d st.
Third-Year Class.....		60

## SECOND YEAR

William B. Arnold	<i>N. Adams, Mass.</i>	127 West 48th st.
Lawrence Atterbury, A.B. (C.)	<i>New York City</i>	141 West 86th st.

NAME	RESIDENCE	CITY ADDRESS
Grosvenor Hyde Backus, A.B. (A.)	<i>Brooklyn, N. Y.</i>	(57 Livingston st.)
Henry Burr Barnes, Jr., A.B. (Y.)	<i>New York City</i>	5 East 44th st.
George R. Beach	<i>Jersey City, N. J.</i>	(105 Hoboken ave.)
John Jacob Burrows	<i>Boonville, N. Y.</i>	
Emanuel Siegfried Cahn, B.S. (C. C.)	<i>New York City</i>	161 East 79th st.
George Bowen Case, A.B. (Y.)	<i>Kansas City, Mo.</i>	32 East 45th st.
Paul Clagstone, A.B. (H. U.)	<i>New York City</i>	27th st. and Fifth ave.
Bernard M. Cone, A.B. (J. H.)	<i>Baltimore, Md.</i>	116 West 74th st.
Alexander Mitchell Crane, A.B. (H. U.)	<i>Scarsdale, N. Y.</i>	
Andrew Wright Crawford, A.B. (U. P.)	<i>Bryn Mawr, Pa.</i>	4 East 43d st.
Constantine Stanislaus Cummings, A.B. (C. B. C.)	<i>St. Louis, Mo.</i>	
		244 West 49th st.
Frederick Denicke, A.B. (U. Ca.)	<i>San Francisco, Cal.</i>	140 East 54th st.
Asa Don Dickinson	<i>Bay Ridge, N. Y.</i>	114 East 19th st.
Frederick Dwight, A.B. (Y.)	<i>Brooklyn, N. Y.</i>	(51 Remsen st.)
Jesse W. Ehrich, A.B. (C. C.)	<i>New York City</i>	54 West 75th st.
Robert W. R. Elliott, A.M. (U. S.)	<i>Sewanee, Tenn.</i>	44 West 46th st.
Henry Lane Eno, A.B. (Y.)	<i>Saugatuck, Conn.</i>	286 Lexington ave.
John Ewen, A.B. (C.)	<i>Spruyten Duyvil, N. Y.</i>	
Moses Feltenstein	<i>New York City</i>	232 Madison st.
David Joseph Fox, B.S. (C. C.)	<i>New York City</i>	127 East 79th st.
Clarence Randolph Freeman	<i>New York City</i>	75 West 85th st.
Albert Fullerton, A.B. (U. K.)	<i>Atchison, Kans.</i>	244 West 52d st.
Joseph Whitney Ganson, A.B. (H. U.)	<i>New York City</i>	47 West 33d st.
Felix Mortimer Gernsheim, A.B. (C.)	<i>New York City</i>	1 East 44th st.
Charles Monteith Gilpin, A.B. (S. J. M.)	<i>Elkton, Md.</i>	53 West 53d st.
Meredith Hare, A.B. (Y.)	<i>New York City</i>	28 West 11th st.
Montgomery Hare, A.B. (Y.)	<i>New York City</i>	28 West 11th st.
Henry Budelman Heylman, A.B. (C. C.)	<i>New York City</i>	561 Buckhout st.
William Henry Hirsh, A.B. (C. C.) ; A.M. (C.)	<i>New York City</i>	
		265 West 21st st.
Edwin O. Holter, A.B. (Y.)	<i>Helena, Mont.</i>	32 East 45th st.
Lloyd Mortimer Howell, A.B. (Y.)	<i>West Hampton Beach, N. Y.</i>	
		127 West 48th st.
Ralph Hughes, A.B. (W. J.)	<i>Liberty, Mo.</i>	244 West 52d st.
Robert Selden Huse, LL.B. (U. S.)	<i>Highland Falls, N. Y.</i>	45 West 55th st.
Robert Hamilton Hutchins, A.M. (T.)	<i>New York City</i>	45 West 55th st.
Maurice Samuel Hyman, A.B. (H. U.)	<i>New York City</i>	102 West 77th st.
Ralph Henry Johnson, A.B. (U. N.)	<i>Friend, Neb.</i>	37 East 50th st.
James T. Kilbreth, Jr., A.B. (H. U.)	<i>Southampton, L. I.</i>	1 West 72d st.
Maulsby Kimball, A.B. (C.)	<i>New York City</i>	32 East 45th st.
Arthur Kline Kuhn, A.B. (C.)	<i>New York City</i>	32 West 84th st.
Edward Lazansky, A.B. (C.)	<i>Brooklyn, N. Y.</i>	(224 Carlton ave.)
Harry Cohen Levey, B. S. (W. and J.)	<i>New York City</i>	13 West 88th st.
Walter Henry Liebmann, A.B. (C.)	<i>New York City</i>	42 East 72d st.
Herbert R. Limburger	<i>New York City</i>	25 East 81st st.

NAME	RESIDENCE	CITY ADDRESS
Gerald Arthur Lowe	<i>New York City</i>	114 East 86th st.
Charles Eddy McCarthy	<i>Troy, N. Y.</i>	43 East 41st st.
William Townsend McCoun, Jr., D.V.S. (A. V. C.)	<i>Oyster Bay, L. I.</i>	37 East 50th st.
Moncure March, A.M. (L.)	<i>Easton, Pa.</i>	69 West 48th st.
Frank Heath Mason	<i>Newark, N. J.</i>	(82 South 11th st.)
William Thomas Mason, A.B. (C.)	<i>New York City</i>	37 West 48th st.
Arthur Mayer	<i>New York City</i>	415 West 145th st.
Samuel M. Michel	<i>New York City</i>	246 East 51st st.
George Frederick Middendorf, Jr.	<i>Brooklyn, N. Y.</i>	(90 Schenck ave.)
Walter Jefferson Moore, A.B. (H.U.)	<i>New York City</i>	60 East 49th st.
Adam Gordon Norrie, A.B. (C.)	<i>New York City</i>	377 Fifth ave.
David Parry	<i>Highland Falls, N. Y.</i>	165 East 49th st.
Benjamin G. Paskusz, A.B. (C. C.) ; A.M. (C.)	<i>New York City</i>	242 East 72d st.
Isidro Pendas, Jr.	<i>Brooklyn, N. Y.</i>	(22 Brevoort pl.)
Henry Berry Pogson, A.B. (C.)	<i>West Farms, N. Y.</i>	2020 Vyse ave.
Frank Lyon Polk, A.B. (Y.)	<i>New York City</i>	7 East 36th st.
Arthur M. Price	<i>New York City</i>	113 West 75th st.
John Gordon Quigley, A.B. (H.U.)	<i>Goshen, N. Y.</i>	(931 Boulevard, Astoria)
Charles Conway Reiley	<i>New York City</i>	145 East 34th st.
William Delamater Riter	<i>Salt Lake City, Utah</i>	152 East 60th st.
Paul Brown Scarff, A.B. (Han. C.)	<i>Burlington, Ia.</i>	225 West 38th st.
Henry Schoenherr, Jr.	<i>Brooklyn, N. Y.</i>	(150 Wythe ave.)
Walter Stanley Schütz, A.B. (T.)	<i>Hartford, Conn.</i>	45 West 55th st.
Lorenzo B. Scranton, A.B. (N.)	<i>Lower Lake, Cal.</i>	250 West 53d st.
Edward Augustus Selfridge, Jr., Ph.B. (U. Ca.)	<i>San Francisco, Cal.</i>	4 East 43d st.
Frederic White Shepard, A.B. (C.)	<i>Brooklyn, N. Y.</i>	(81 Columbia Heights)
Henry Steinert, Jr.	<i>New York City</i>	221 East 53d st.
Samuel Sturtz	<i>New York City</i>	165 East 49th st.
Lawrence Arnold Tanzer, A.B. (H.U.)	<i>New York City</i>	109 West 77th st.
Stephen Fraser Thayer, A.B. (C.)	<i>Yonkers, N. Y.</i>	(75 Hawthorne ave.)
Nathaniel Compton Toms	<i>Morristown, N. J.</i>	
George Finch Van Slyck, A.B. (Y.)	<i>New York City</i>	284 Amsterdam ave.
Richmond Weed, A.B. (C.)	<i>Flushing, L. I.</i>	(30 Jamaica ave.)
Abraham Wielar	<i>New York City</i>	251 East 84th st.
James Dawes Williams, A.B. (Y.)	<i>North Adams, Mass.</i>	Murray Hill Hotel
Second Year Class . . . . .		80

## FIRST YEAR

Alexander Speer Andrews, A.B. (C. N. J.)	<i>Zanesville, O.</i>	140 West 57th st.
Holcombe Bacon	<i>Atlanta, Ga.</i>	24 East 47th st.
William Anthony Baker	<i>Little Falls, N. Y.</i>	251 West 55th st.
Wilbur Laing Ball, A.B. (U. W.)	<i>Madison, Wis.</i>	63 West 51st st.

NAME	RESIDENCE	CITY ADDRESS
George Ezra Batcheller, A.B. (Y.)	<i>New York City</i>	37 Fifth ave.
Wyllys Pomeroy Baxter	<i>Montclair, N. J.</i>	(121 Chestnut st.)
Anson McCook Beard, A.B. (Y.)	<i>Poughkeepsie, N. Y.</i>	Madison ave. Hotel
Marx Morton Bechhold, A.B. (H. U.)	<i>New York City</i>	100 East 71st st.
Clinton Edward Bell, A.B. (A.)	<i>New York City</i>	East Side House Foot 76th st. and E. R.
David C. Bennett, Jr., A.B. (P. I.)	<i>Brooklyn, N. Y.</i>	(79th st. and 4th ave.)
Hermann A. Bolte	<i>New York City</i>	18 East 109th st.
Oscar Rutherford Brandt	<i>New York City</i>	Marble Hill, Kingsbridge
John H. Brewster, Jr.	<i>Rochester, N. Y.</i>	56 West 18th st.
Dudley Bliss Buell	<i>Milwaukee, Wis.</i>	45 West 55th st.
Fred. Rhodes Burrows, Ph.B. (Ad. C.)	<i>Cleveland, O.</i>	150 East 53d st.
Louis W. Burrows	<i>Cleveland, O.</i>	150 East 53d st.
Mortimer Wardler Byers	<i>Brooklyn, N. Y.</i>	(73 Herkimer st.)
Benjamin Stickney Cable, A.B. (Y.)	<i>Chicago, Ill.</i>	22 West 34th st.
Alonzo R. Campbell	<i>Independence, Ia.</i>	344 West 51st st.
Walter Frederick Carter, A.B. (Y.)	<i>Brooklyn, N. Y.</i>	(176 Brooklyn ave.)
Charles Bishop Chisholm	<i>Bozeman, Mont.</i>	47 East 21st st.
Herbert Lawton Coffin	<i>New York City</i>	142 East 18th st.
Isidore Cohn	<i>New York City</i>	250 East 60th st.
Walter Evans Cooke, A.B. (Y.)	<i>Paterson, N. J.</i>	(437 Ellison st.)
Alford W. Cooley, A.B. (H. U.)	<i>Westchester, N. Y.</i>	
Abraham Harrison Cornish, A.B. (H. U.)	<i>Gillette, N. J.</i>	275 Vanderbilt ave, Brooklyn
Richard Raymond Costello, A.B. (M. C.)	<i>New York City</i>	129 East 71st st.
Joseph Mory Daggett	<i>New York City</i>	1296 Madison ave,
David Theodor Davis, A.B. (McG. U.)	<i>New York City</i>	15 East 62d st.
Schuyler Emerson Day, A.B. (C.)	<i>New York City</i>	3 West 63d st.
Frank Henry Deal	<i>Troy, N. Y.</i>	150 East 53d st.
George Edmond DeBraekeleer	<i>New York City</i>	121 West 80th st.
Eugene Willis Denton	<i>New Hyde Park, N. Y.</i>	
Harris Renz Dingwall, B.S. (T.)	<i>Detroit, Mich.</i>	202 West 44th st.
Maurice Edgards Doran, A.B. (S. J.)	<i>St. Paul, Minn.</i>	44 West 46th st.
Michael Doran, Jr., A.B. (S. J.)	<i>St. Paul, Minn.</i>	44 West 46th st.
Robert Laurie Eaton	<i>Elizabeth, N. J.</i>	(1141 East Jersey st.)
Charles F. Eberle	<i>Chatham, N. Y.</i>	224 Lexington ave.
Henry William Egner, Jr., A.B. (C.)	<i>Newark, N. J.</i>	(1015 Broad st.)
Oscar Weeks Ehrhorn, A.B. (C. C.)	<i>New York City</i>	215 Ninth ave.
Benjamin Franklin Einbighler	<i>New York City</i>	687 Amsterdam ave.
Jerome Eisner, B.S. (C. C.)	<i>New York City</i>	158 East 72d st.
Heyman R. Elias, A.B. (C. C.)	<i>New York City</i>	95 East 7th st.
Franklin Elmore, A.B. (Y.)	<i>Troy, N. Y.</i>	432 Madison ave.
Harry Louis Falk	<i>Decatur, Ala.</i>	117 East 60th st.
Edward James Farley, A.B. (M. C.)	<i>New York City</i>	10 West 84th st.
Joseph Lea Fearing	<i>New York City</i>	7 East 43d st.
Edward R. Finch, A.B. (Y.)	<i>Plainfield, N. J.</i>	(Park ave.)



NAME	RESIDENCE	CITY ADDRESS
John Harding Fisher, A.B. (S. J.)	<i>New York City</i>	Bedford Park
Charles L. Fleming, Jr.	<i>New York City</i>	845 St. Nicholas ave.
Frederic Wellington Forsythe, B.L. (L. U.)	<i>Lincoln, Ill.</i>	157 West 46th st.
George Henry D. Foster, A.B. (Bo. C.)	<i>Portland, Me.</i>	Hotel Continental
Joseph P. Friedman, A.B. (C. C.)	<i>New York City</i>	32 Ridge st.
Frederic N. Gilbert	<i>Brooklyn, N. Y.</i>	(168 State st.)
Bernard Goldberg	<i>New York City</i>	157 East 72d st.
Herbert Goldmark, A.B. (P. I.)	<i>Brooklyn, N. Y.</i>	(626 Greene ave.)
George Selden Goodrich	<i>Brooklyn, N. Y.</i>	(416 Clinton ave.)
Willard H. Goodwin, Ph.B. (R. U.)	<i>Geneseo, N. Y.</i>	Passaic, N. J.
Sharon Graham	<i>Montreal, Canada</i>	850 Lexington ave.
Ralph C. Green	<i>Sayville, N. Y.</i>	533 Lexington ave.
Daniel Eddie Griswold	<i>Lyme, Conn.</i>	186 Lexington ave.
Arcule Edouard Guilmette, A.B. (U. N.)	<i>Hastings, Neb.</i>	141 East 53d st.
Sumner Hanauer (G. F.)	<i>New York City</i>	12 East 47th st.
Myron Harris	<i>Orange, N. J.</i>	(39 Cleveland st.)
Norman Swope Heindel	<i>Gettysburg, Pa.</i>	145 East 49th st.
George Michael Heumann	<i>New York City</i>	145 East 58th st.
Frederick Brackett Hill, A.B. (H. U.)	<i>Cambridge, Mass.</i>	355 West 145th st.
George Place Hill	<i>New York City</i>	31 East 75th st.
Alexander Hirshberg	<i>Newark, O.</i>	228 West 130th st.
James Fisk Hooker, A.B. (Y.)	<i>Brattleboro, Vt.</i>	Plaza Hotel
Richard Manderful Hotaling	<i>San Francisco, Cal.</i>	44 East 51st st.
Frank Winfield Hubby, Jr., A.B. (Y.)	<i>Cleveland, O.</i>	153 East 36th st.
Francis Rader Hulick	<i>Easton, Pa.</i>	20 East 47th st.
Victor William Hungerford	<i>New York City</i>	121 West 69th st.
Charles Joseph	<i>New York City</i>	314 East 116th st.
John Daniel Kaps	<i>Portsmouth, O.</i>	237 East 32d st.
James Allison Kelly	<i>Nashville, Tenn.</i>	147 West 57th st.
Gilbert Falcouer Kennedy, B.S. (H. U.)	<i>Rondout, N. Y.</i>	26 West 50th st.
Charles Henry Ketcham	<i>Yonkers, N. Y.</i>	(148 North Broadway)
Gustavus Town Kirby, E. E. (C.)	<i>New York City</i>	158 West 45th st.
Edward Lasker	<i>Galveston, Tex.</i>	214 East 72d st.
James D. Layng, Jr., Ph.B. (Y.)	<i>New York City</i>	931 Fifth ave.
Charles Shaw Leonard, B.S. (Hi. U.)	<i>Highland, Kans.</i>	142 East 47th st.
Adolph Mitchell Leslie	<i>Odessa, Russia</i>	419 East 51st st.
Arthur Henry Longfellow, A.B. (H. U.)	<i>Boston, Mass.</i>	145 West 48th st.
Thomas Vincent Loughran, A.B. (M. C.)	<i>New York City</i>	445 West 47th st.
Frank Amanda Lutz, A.B. (U. K.)	<i>Beloit, Kans.</i>	244 West 52d st.
Philip M. Lydig, A.B. (H. U.)	<i>New York City</i>	Clarendon Hotel
Charles Watson McCandless, Ph.B. (O.)	<i>Allegheny, Pa.</i>	360 West 58th st.
Leo Lawrence McLaughlin, A.B. (S. X.)	<i>New York City</i>	158 Waverley pl.
Malcolm Macdonald, Jr.	<i>Camden, N. J.</i>	1 West 81st st.
Herbert Louis May	<i>Allegheny, Pa.</i>	150 East 60th st.
Sidney Stuyvesant Meyers	<i>New York City</i>	110 East 92d st.
Clark Aubert Miller	<i>New Rochelle, N. Y.</i>	Plaza Hotel

NAME	RESIDENCE	CITY ADDRESS
Hubert Chambers Minard, A.B. (S. U.)	<i>Buffalo, N. Y.</i>	152 East 56th st.
Roscius Morse, Jr.	<i>Elmira, N. Y.</i>	366 West 55th st.
William T. O'Donnell, A.B. (Br.)	<i>Bristol, R. I.</i>	150 East 53d st.
Arthur Wellington Opp	<i>Brooklyn, N. Y.</i>	(181 Vernon ave.)
Porter Paddock, B.S. (Bl. U.)	<i>Carlinville, Ill.</i>	62 East 127th st.
Edward Codman Parish	<i>New York City</i>	1 West 19th st.
William Usher Parsons, Ph.B. (Y.)	<i>New York City</i>	1033 Madison ave.
Harry Putnam Pearsons, A.B. (N. U.)	<i>Evanston, Ill.</i>	68 West 48th st.
Henry Hollister Pease, A.B. (H. U.)	<i>New York City</i>	22 West 43d st.
John J. Phelan, A.B. (M. C.)	<i>New York City</i>	66 West 85th st.
Edward Loomis Phillips	<i>North East, Pa.</i>	140 East 47th st.
Bertram Pittis	<i>Plainfield, N. J.</i>	234 West 44th st.
James William Prendergast, Jr., A.B. (M. S. M.)	<i>Brooklyn, N. Y.</i>	(259 Clinton ave.)
Hughes T. Reynolds	<i>Rome, Ga.</i>	20 East 47th st.
Charles Elting Rickerson	<i>Brooklyn, N. Y.</i>	(37 Eighth ave.)
William Combs Ridgway	<i>Jersey City, N. Y.</i>	(18 Kensington ave.)
William Ringert	<i>Los Angeles, Cal.</i>	117 West 46th st.
Clifford Charles Roberts	<i>New York City</i>	72 West 94th st.
Stephen Bogert Roe, Ph.B. (Y.)	<i>New York City</i>	35 East 37th st.
Alfred Roelker, Jr., A.B. (A.)	<i>New York City</i>	202 West 45th st.
James Naumburg Rosenberg, A.B. (C.)	<i>New York City</i>	122 West 87th st.
John C. Rowe, A.B. (H. U.)	<i>South Bethlehem, N. Y.</i>	626 Lexington ave.
George Rubenstein	<i>New York City</i>	112 East 80th st.
David Rumsey	<i>Bath, N. Y.</i>	34 West 36th st.
George E. Ruppert	<i>New York City</i>	1116 Fifth ave.
Henry Salant, Ph.B. (U. C. N. Y.)	<i>New York City</i>	348 East 78th st.
Henry Gansevoort Sanford, A.B. (W.)	<i>Poughkeepsie, N. Y.</i>	Mad. ave. Hotel
Leo Schafran, B.S. (C. C.)	<i>New York City</i>	1644 Madison ave.
Samuel Adams Singerman	<i>New York City</i>	344 West 48th st.
John P. Smith, A.B. (C. C.)	<i>New York City</i>	355 West 17th st.
Philip Sondheim	<i>Bradford, Pa.</i>	346 East 50th st.
William Dick Sporborg	<i>Albany, N. Y.</i>	111 East 65th st.
Benjamin Horace Stern, Ph.B. (U. C. N. Y.)	<i>New York City</i>	133 East 80th st.
Harlan Fiske Stone, B.S. (A.)	<i>Amherst, Mass.</i>	223 Cumberland st., Bkl'n
Ralph Alonzo Sturges, A.B. (Ba. C.)	<i>Lewiston, Me.</i>	141 East 44th st.
Jay Linton Thompson, A.B. (H. U.)	<i>New York City</i>	24 West 85th st.
Charles Herman Trask	<i>Little Falls, N. Y.</i>	160 East 49th st.
Ralph Underhill	<i>Brooklyn, N. Y.</i>	(54 Eighth ave.)
John Edwin Walker	<i>Tacoma, Wash.</i>	29 East 46th st.
Charles Rudolph Wendt	<i>New York City</i>	25 East 37th st.
Arthur Werdenschlag, B.S. (C. C.)	<i>New York City</i>	140 West 48th st.
Arthur Louis Wessel	<i>New York City</i>	47 West 70th st.
Shelton King Wheeler, A.B. (Y.)	<i>Chattanooga, Tenn.</i>	163 Madison ave.
Harry Payne Whitney, A.B. (Y.)	<i>New York City</i>	2 West 57th st.
Reginald Effingham Wigham	<i>New York City</i>	142 East 40th st.

NAME	RESIDENCE	CITY ADDRESS
John McKinlay Wight, A.B. (L. S.)	<i>San Francisco, Cal.</i>	150 East 53d st.
Arthur K. Wing	<i>North East, Pa.</i>	140 East 47th st.
Jeremiah Wood	<i>Brooklyn, N. Y.</i>	(40 Hart st.)
Christian C. H. Zillman, B.S. (U. Mo.)	<i>Brunswick, Mo.</i>	69 West 49th st.

First-Year Class ..... 143

### SPECIAL STUDENTS

J. Searle Barclay, Jr.	<i>New York City</i>	56 East 49th st.
Alfred Wreaks Booraem	<i>New York City</i>	48 West 82d st.
Bayard Church	<i>Yonkers, N. Y.</i>	(78 Warburton ave.)
Walter Roy Clayton	<i>Troy, O.</i>	60 West 92d st.
Ewing Leo Deputy	<i>Portsmouth, O.</i>	106 East 55th st.
Percy Fentress Dickey	<i>New York City</i>	340 West 56th st.
John Giblon Duffy	<i>New York City</i>	120 West 22d st.
Richard Aston Elliott	<i>New York City</i>	244 West 72d st.
Alexander Aberdeen Forman, Jr.	<i>Brooklyn, N. Y.</i>	(573 St. Marks ave.)
Anson Lapham Gardner	<i>Farmington, N. Y.</i>	44 East 51st st.
Frederick Collins Garrick	<i>San Francisco, Cal.</i>	62 Clinton pl.
Stanley C. Hanks, B.L. (U. W.)	<i>Madison, Wis.</i>	38 West 61st st.
Morris Samuel Hart	<i>New York City</i>	6 West 103d st.
Charles Edwin Heckler	<i>Chicago, Ill.</i>	126 East 58th st.
Henry Grale Hershfield	<i>Helena, Mont.</i>	41 East 67th st.
Renwick Clifton Hurry	<i>New York City</i>	56 East 49th st.
Harry Partridge Keith	<i>Hempstead, L. I.</i>	
John Frederick Lockwood	<i>New York City</i>	155th st. cor. Amsterdam ave.
Hugh James McConn	<i>Ft. Madison, Ia.</i>	63 West 51st st.
S. Duncan Marshall, Jr.	<i>Bartow-on-Sound, N. Y.</i>	
Eugene Joseph Murphy	<i>Jersey City, N. J.</i>	(275 Central ave.)
Washington Romaine Nichols	<i>New York City</i>	358 Lexington ave.
Leonard J. Obermeier	<i>New York City</i>	220 East 48th st.
Edward W. Perry	<i>Westwood, N. J.</i>	
Hugh R. Potts	<i>New York City</i>	138 West 57th st.
Walter Buchanan Raymond	<i>Brooklyn, N. Y.</i>	(106 Taylor st.)
William Henry Raymond	<i>Lincoln, Neb.</i>	141 East 53d st.
William Aloysius Redden	<i>Bridgeport, Conn.</i>	139 East 48th st.
Frank Matthew Roberts, LL.B. (U. Mo.)	<i>Independence, Mo.</i>	145 West 48th st.
William Perry Rogers, A.B., LL.B. (U. Ind.)	<i>Bloomington, Ind.</i>	302 West 45th st.
Nathaniel R. Rutherford, Jr.	<i>Milford, Tex.</i>	302 West 45th st.
T. W. Satterthwaite	<i>Nutley, N. J.</i>	
Irving E. Schwarz	<i>Dover, N. J.</i>	
Thomas Bailey Slayden	<i>Waco, Tex.</i>	Hoffman House
Frank John Smith	<i>Caldwell, Idaho</i>	149 East 47th st.
Robert William Stewart	<i>New York City</i>	123 West 11th st.
Charles K. Terry	<i>Brooklyn, N. Y.</i>	(436 Clinton st.)

NAME	RESIDENCE	CITY ADDRESS
Gerard Beekman Underhill	<i>Bay Shore, N. Y.</i>	101 West 81st st.
William Cravath White, Ph.B., LL.B. (C. U.)	<i>Ithaca, N. Y.</i>	129 Lexington ave.
Special Students.....		39

## SCHOOL OF ARTS SENIORS

Bernard Alexander	<i>New York City</i>	33 Pitt st.
Granville Ingraham Burr	<i>New York City</i>	513 West 144th st.
David Cohn	<i>Paterson, N. J.</i>	(83 Auburn st.)
Maurice Cohn	<i>Paterson, N. J.</i>	(83 Auburn st.)
Edward Hamilton Daly	<i>New York City</i>	19 East 62d st.
Edward Thomas Johnston	<i>Setauket, N. Y.</i>	353 Third ave.
Irving Lehman	<i>New York City</i>	5 East 62d st.
Frederick Montgomery Livingston	<i>Brooklyn, N. Y.</i>	(370 Greene ave.
Allan C. Rowe	<i>Brooklyn, N. Y.</i>	(550 Washington ave.)
Franklin Edwin Reese	<i>Westfield, N. J.</i>	
Seniors in the School of Arts.....		10

## PARENTAGE OF COLLEGE DEGREES

## ABBREVIATIONS

## GRADUATES

A.	Amherst College	4
Ad. C.	Adelbert College	1
B. C.	Buchtel College	1
Ba. C.	Bates College	1
Bl. U.	Blackburn University	1
Bo. C.	Bowdoin College	1
Br.	Brown University	1
C.	Columbia College	29
C. B. C.	Christian Bros. College, St. Louis, Mo.	1
C. C.	College of the City of New York	24
C. N. J.	College of New Jersey	1
C. U.	Cornell University	1
G.	Georgetown College	1
G. F.	Gymnasium, Frankf. a/M.	1
Han. C.	Hanover College, Ind.	1
Hi. U.	Highland University, Kans.	1
H. U.	Harvard University	21
J. H.	Johns Hopkins University	1
L.	Lafayette College	1
L. S.	Leland Stanford, Jr., University	1
L. U.	Lincoln University	1
M. C.	Manhattan College	4
McG. U.	McGill University, Canada	1
M. S. M.	Mount St. Mary's College, Md.	1
N.	Napa College	1
N. U.	Northwestern University	1
N. W. C.	New Windsor College, Md.	1
P. I.	Polytechnic Institute, Brooklyn	3
O.	Oberlin College, O.	1
R. U.	University of Rochester	1
S. H.	Spring Hill College	1

Se. H.	Seton Hall College	1
S. J.	St. John's College, New York	3
S. J. M.	St. John's College, Md.	1
S. U.	Syracuse University	1
S. X.	St. Francis Xavier's College, New York	5
T.	Trinity College, Ct.	3
U. C. N. Y.	University of the City of New York	2
U. Ca.	University of California	2
T. Ind.	Indiana University	1
U. K.	University of Kansas	2
U. Mo.	State University of Missouri	1
U. N.	University of Nebraska	2
U. P.	University of Pennsylvania	1
U. S.	University of the South	1
U. S. C.	University of South Carolina	1
U. W.	University of Wisconsin	2
W.	Williams College	1
W. J.	William Jewell College, Liberty, Mo.	1
W. & J.	Washington and Jefferson College	1
Y.	Yale University	27
<hr/> 51 Colleges and Universities. Total Graduates		<hr/> 169

## SUMMARY

Graduate Students	1
Third-Year Class	60
Second-Year Class	80
First-Year Class	143
Special Students	39
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Students registered in the Law School	323
Seniors in the School of Arts	10
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Total	333



## SCHOOL OF MEDICINE

### COLLEGE OF PHYSICIANS AND SURGEONS

The instruction in medicine is given under the following departments :

ANATOMY	NEUROLOGY
CHEMISTRY AND PHYSICS	OBSTETRICS
DISEASES OF CHILDREN	OPHTHALMOLOGY
DERMATOLOGY	OTOLOGY
GENITO-URINARY AND VENEREAL DISEASES	PATHOLOGY
GYNECOLOGY	PHYSIOLOGY
LARYNGOLOGY	PRACTICE OF MEDICINE
MATERIA MEDICA AND THERAPEUTICS	SURGERY

#### Officers of the Faculty

JAMES W. McLANE, M.D.....	<i>Dean and ex-officio Member of the University Council</i>
JOHN G. CURTIS, M.D.....	<i>Elected Delegate to the University Council</i>
EDWIN B. CRAGIN, M.D.....	<i>Secretary</i>

#### Faculty

SETH LOW, LL.D., *President*

JAMES W. McLANE, M.D.,	<i>Professor of Obstetrics</i>
CHARLES F. CHANDLER, Ph.D.,	<i>Professor of Chemistry and Medical Jurisprudence</i>
FRANCIS DELAFIELD, M.D.,	<i>Professor of the Practice of Medicine</i>
JOHN G. CURTIS, M.D.,	<i>Professor of Physiology</i>
GEORGE M. TUTTLE, M.D.,	<i>Professor of Gynecology</i>
GEORGE L. PEABODY, M.D.,	<i>Professor of Materia Medica and Therapeutics</i>
WILLIAM T. BULL, M.D.,	<i>Professor of Surgery</i>
M. ALLEN STARR, M.D.,	<i>Professor of Diseases of the Mind and Nervous System</i>
GEORGE S. HUNTINGTON, M.D.,	<i>Professor of Anatomy</i>
ROBERT F. WEIR, M.D.,	<i>Professor of Surgery</i>
T. MITCHELL PRUDDEN, M.D.,	<i>Professor of Pathology, Directory of the Laboratories of Histology, Pathology, and Bacteriology</i>

NOTE.—For other instructors see departmental statements.

## GENERAL STATEMENT

The College of Physicians and Surgeons, on July 1, 1891, became, under the authority of the Legislature, a part of Columbia College. This merger, which makes the medical department in a complete sense an integral part of the University system, largely increases the usefulness of the Medical School, favors the thoroughness of scientific medical education, and promotes scientific research. The accessions to the teaching force, notably in the Department of Anatomy and in the physiological, pathological, bacteriological, and chemical laboratories, permit the realization, to a degree previously quite impossible, of the great opportunities for instruction and research afforded by the excellence of the dissecting rooms, the laboratories, and apparatus.

The college occupies a group of buildings, given by the late William H. Vanderbilt and members of his family, and by William D. Sloane, Esq., which stand upon thirty contiguous lots of land, bounded on the south, west, and north by Fifty-ninth Street, Tenth Avenue, and Sixtieth Street, respectively, and lying immediately opposite to the Roosevelt Hospital.

The station, which is a few steps from the college, at the corner of Fifty-ninth Street and Ninth Avenue, is the point of union of the Ninth Avenue and Sixth Avenue Elevated Railroads, by either of which the buildings are immediately accessible from the north and south.

The "across-town" surface cars of the Belt-line Surface Railway move east and west along Fifty-ninth Street, pass the site of the college, and place it in easy communication with the Second and Third Avenue Elevated roads, and with the numerous lines of surface-cars which reach Fifty-ninth Street from the north and south. All important points in the city, including the various hospitals, can thus readily be reached from the college without a walk of any length.

The buildings appertaining to the college are three in number :

THE COLLEGE BUILDING PROPER ;

THE VANDERBILT CLINIC ;

THE SLOANE MATERNITY HOSPITAL.

THE COLLEGE BUILDING PROPER has been designed to facilitate that combination of didactic instructions with laboratory work which is essential to a modern scientific training. It consists of a *southern portion*, measuring 140 feet by 43 feet, extending along Fifty-ninth Street ; of a *northern portion*, 96 feet by 43 feet, extending along Sixtieth Street ; and of a *middle portion*, 96 feet by 55 feet, connecting the other two. The total area covered is therefore 15,428 square feet. Each story above the basement of the northern and southern portion has been built "in the clear," and contains neither brick partitions nor iron columns. It is therefore possible to remodel the interior at any future time.

Through the recent generous gift of Messrs. Cornelius, William K., Frederick W., and George W. Vanderbilt, there has been rendered possible an important enlargement of the college building proper, to provide additional facilities for anatomical teaching and for practical work in Pathology and Bacteriology.

The present south wing of the college will be extended on Fifty-ninth Street

eastward for 55 feet, the depth of the new wing being 80 feet. This new building will be four stories high and will be devoted to the Department of Anatomy. The basement will contain the cast and modelling rooms, the corrosion room, and the reference osteological collection. The first and second stories will be occupied by the Museum of Human and Comparative Morphology, the first floor being provided with a gallery, greatly increasing the available floor space.

The Morphological Research Laboratory, at present situated in the north wing of the college building, will be transferred to the third story of the new anatomical building, affording ample accommodations for the researches of the officers of the department and for post-graduate students.

The fourth floor will form an extension to the present dissecting-room. When completed the new class-room for practical anatomy will accommodate over four hundred students, and by means of the artificial cooling plant work can be carried on without regard to the outside temperature.

The north end of the fourth floor will be occupied by a small auditorium for anatomical demonstrations. It will have overhead light and an arrangement of seats carefully planned, so as to bring each member of the sections close to the object of the demonstration.

The two upper floors of the new building over the Vanderbilt Clinic extension will be made continuous with the space now occupied by the Department of Pathology, and will be devoted to the present work of this department in Pathology and Bacteriology, and to such an extension of these as the plans of the new four-years' course require. There will be on the upper fifth floor a large laboratory for the new undergraduate course in Bacteriology of the second year, and a series of larger and smaller rooms for advanced students and research work in this theme. On the fourth floor there will be a large laboratory for special advanced students in Pathology and for research, a series of private rooms for the instructors, and a library.

### Vanderbilt Clinic

The new VANDERBILT CLINIC extends from the corner of Sixtieth Street and Tenth Avenue to the north wing of the college building, covering an area 180 by 60 feet, and is three stories in height. It is twice the size of the original building.

This institution was built and endowed by the sons of the late William H. Vanderbilt as a memorial of their father. It supplies a fully equipped dispensary service for the sick poor. It also affords ample material for extended practical clinical instruction in the various departments of medicine and surgery, as the professors, with their clinical assistants, have the entire charge of its practice.

During the year 1893, 129,444 patients were treated in the dispensary, of whom 39,569 were new patients. During the year 1894, 136,859 patients were treated, of whom 41,871 were new.

The original building having proved inadequate to accommodate these large numbers, the sons of Mr. Vanderbilt have recently (1895) united in an additional

gift of \$350,000, enabling the size of the building to be doubled. In the enlarged building, which will be opened in 1896, ample space will be provided not only for the reception of the constantly increasing number of patients, but also for the instruction of the students in small classes in each of the ten different departments. Two large dark rooms with twenty stalls are provided for the instruction in the use of the ophthalmoscope and laryngoscope. Each department has a room for the practical instruction of small groups of students, in addition to the rooms devoted to the treatment of patients. There is a large theatre for the clinical lectures, accommodating about four hundred students, and a smaller lecture hall where one hundred can be seated.

All modern appliances for the treatment of diseases have been introduced, so that students can learn thoroughly the use of all methods in each department, and thus can acquire a practical knowledge of all the "specialties" in medicine.

### Sloane Maternity Hospital

THE SLOANE MATERNITY HOSPITAL is upon the college land at the corner of Fifty-ninth Street and Tenth Avenue.

This is a lying-in hospital given by William D. Sloane, Esq., whose wife a daughter of the late William H. Vanderbilt, has endowed the institution by making all of its beds free in perpetuity.

The obstetric service here is under the exclusive direction of the Professor of Midwifery at the college, the Instructor in obstetrics being the Resident Physician.

For further details and for practical instruction at this hospital, see "Obstetrics," page 104.

Through the further munificence of Mr. Sloane the present hospital is to be greatly enlarged. The new building will be erected upon Fifty-ninth Street, east of the present building and continuous with it. It will be six stories high, but will conform to the old building in general architectural style. This will furnish seventy-two additional beds for patients and offer greater accommodation for the House Staff and for the nurses. In the new hospital there will be an operating room which will accommodate about fifty students. Mrs. Sloane has agreed to provide for the increased cost of maintenance of the hospital during her life, and at her death to make in her will suitable provision for its support.

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### CURRICULUM

The work required of the students at this college who are candidates for the degree of M.D. now covers four years of study according to the curriculum set forth below in outline.

This curriculum will be worked up in detail year by year, as the course progresses, the right being reserved to make amendments as experience may prove necessary.

Programmes of the exercises, giving time and place, will be distributed among the matriculates at the beginning of each annual session.

The following statement is drawn up from the point of view of the student, and shows what is expected of each matriculate taking the regular curriculum.

*In all subjects which are not completed in a single year the instruction offered to a given student will be different each year.*

*Every student intending to pursue the four-year's course must register his name in person within the first seven working days of each session.*

Students of the first year in the four-years' course will not be excused from attendance on the regular examinations in Physics and Chemistry, on account of work performed elsewhere.

### First Year

PHYSICS AND CHEMISTRY, INCLUDING MEDICAL CHEMISTRY.

*Lectures* combined with demonstrations, 4 a week.

*Conferences*, 2 a week for one half the year.

\* *Laboratory Work* in practical physics, 2-hour exercises once a week for one half the year.

*Laboratory Work* in practical medical chemistry, 2-hour exercise twice a week for one half the year.

ANATOMY, begun.

*Demonstrations* to sections, 4 a week for each student.

*Laboratory Work* in dissection, 18 to 20 hours a week, for from 3 to 5 periods of 4 weeks each.

NORMAL HISTOLOGY, begun.

*Laboratory Work*, 2-hour exercises 3 times a week for one half the year.

PHYSIOLOGY, begun.

*Lectures* combined with demonstrations, 3 a week.

*Demonstrations* to sections, from 1 to 3 a week for each student.

EXAMINATIONS upon the work of the first year.

### Second Year

ANATOMY, finished.

*Lectures* combined with demonstrations, 3 a week.

*Demonstrations* to sections, 4 a week for each student for one half the year ; 5 a week for each student for one half the year.

*Laboratory Work* in dissection, 10 to 12 hours a week for from 1 to 3 periods of 4 weeks each.

NORMAL HISTOLOGY, finished.

*Laboratory Work*, 2-hour exercises twice a week for one half the year.

PHYSIOLOGY, finished.

*Lectures* combined with demonstrations, 3 a week.

*Demonstrations* to sections from 1 to 3 a week for each student.

\* At the Columbia College Physical Laboratory, 49th Street and Madison Avenue.



**PATHOLOGICAL ANATOMY**, begun.

*Attendance at Autopsies*, with practical instruction, once a week for 8 weeks.

**BACTERIOLOGY**.

*Laboratory Work*, 2-hour exercises 3 times a week for one fourth the year.

**MATERIA MEDICA AND THERAPEUTICS**, begun.

*Lectures*, 3 a week.

**TOXICOLOGY**.

*Laboratory Work*, 2-hour exercises once a week for one half the year.

*Conferences*, once a week for one half the year.

**OBSTETRICS AND GYNECOLOGY**, begun.

*Recitations* combined with demonstrations to sections, 1 a week for each student.

EXAMINATIONS upon the work of the second year.

### Third Year

**MATERIA MEDICA AND THERAPEUTICS**, finished.

*Lectures*, 3 a week.

**PATHOLOGICAL ANATOMY**, finished.

*Demonstrations* to sections, 2 a week for each student.

**PATHOLOGICAL HISTOLOGY**.

*Laboratory Work*, 2-hour exercises 3 times a week for one half the year.

**THE PRACTICE OF MEDICINE, INCLUDING THE DISEASES OF THE MIND AND NERVOUS SYSTEM**, begun.

*Lectures*, 3 a week.

*Clinical Lectures* at the Vanderbilt Clinic, once a week.

*Clinical Lectures* or instruction in the wards at the Roosevelt Hospital, once a week; at the New York Hospital once a week for one half the year, twice a week for one half the year.

*Practical Clinical Instruction* to sections in physical diagnosis, for each student twice a week for 16 weeks.

*Practical Clinical Instruction* to sections in general diagnosis, for each student twice a week for 8 weeks.

**THE PRINCIPLES AND PRACTICE OF SURGERY**, begun.

*Lectures*, 3 a week.

*Clinical Lectures* at the Vanderbilt Clinic, once a week.

*Clinical Lectures* and the witnessing of operations at the New York or Roosevelt Hospital, once a week; at the New York Hospital (in addition to the above), once a week for one half the year; at the Presbyterian Hospital, once a week for one half the year.

*Practical Clinical Instruction* to sections, for each student twice a week for 16 weeks.

*Optional—Clinical Lectures* and the witnessing of operations at St. Luke's Hospital.

## OBSTETRICS AND GYNECOLOGY, continued.

*Lectures*, 3 a week.

*Clinical Lectures* in Gynecology at the Vanderbilt Clinic, 1 a week.

*Clinical Lectures* and the witnessing of operations in Gynecology at the Roosevelt Hospital, by sections, 6 exercises for each student.

*Practical Clinical Instruction* to sections in Gynecology, 6 exercises for each student.

## VENEREAL DISEASES.

*Clinical Lectures* at the Vanderbilt Clinic, 1 a week.

*Clinical Lectures* at Bellevue Hospital, 1 a week for one half the year.

*Practical Clinical Instruction* to sections, 12 exercises for each student.

*Optional—Clinics* at the City Hospital, Blackwell's Island, 1 a week for three months.

## DISEASES OF THE EYE.

*Clinical Lectures* at the Vanderbilt Clinic, 1 a week.

*Practical Clinical Instruction* to sections, 12 exercises for each student.

## DISEASES OF THE EAR.

*Practical Clinical Instruction* to sections, 6 exercises for each student.

EXAMINATIONS upon the work of the third year.

**Fourth Year**

## THE PRACTICE OF MEDICINE, INCLUDING THE DISEASES OF THE MIND AND NERVOUS SYSTEM, finished.

*Lectures*, 3 a week.

*Clinical Lectures* at the Vanderbilt Clinic, 2 a week.

*Clinical Lectures or Instruction* in the wards, at the Roosevelt Hospital once a week; at the New York Hospital once a week for four months.

*Practical Clinical Instruction* to sections in the wards of the Roosevelt or Bellevue Hospital, for each student 2-hour exercises 3 times a week for 8 weeks.

*Practical Clinical Instruction* to sections in the diagnosis of diseases of the nervous system, 6 exercises for each student.

*Optional—Clinical Instruction* in Bellevue and Presbyterian Hospitals, once a week.

## CLINICAL MICROSCOPY.

*Laboratory Work*, 2-hour exercises twice a week for 8 weeks.

## THE PRINCIPLES AND PRACTICE OF SURGERY, finished.

*Lectures* 3 a week.

*Clinical Lectures* at the Vanderbilt Clinic, 1 a week.

*Clinical Lectures* and the witnessing of operations at the New York or Roosevelt Hospital, once a week for one half the year; at Bellevue Hospital, once a week for one half the year; at the Presbyterian Hospital, once a week for one half the year.

*Surgical Demonstrations* at the Roosevelt Hospital, once a week for one half the year.

*Practical Clinical Instruction* to sections in the wards of Bellevue Hospital, for each student 2-hour exercises twice a week for 8 weeks.

*Operative Surgery* on the Cadaver for sections, 12 lessons ; required or elective as may hereafter be determined.

*Optional—Clinical Lectures* and the witnessing of operations at the New York Hospital (additional to the above); at St. Luke's Hospital.

#### ORTHOPÆDIC SURGERY.

*Clinical Lectures* at the Vanderbilt Clinic, 1 a week.

*Practical Clinical Instruction* to sections, 12 exercises for each student.

#### OBSTETRICS AND GYNECOLOGY, finished.

*Attendance upon Confinements* at the Sloane Maternity Hospital.

*Practical Clinical Instruction* in obstetrics to sections, at the Sloane Maternity Hospital, for each student, daily for one week.

*Clinical Lectures* in gynecology at the Vanderbilt Clinic, 1 a week.

#### DISEASES OF CHILDREN.

*Clinical Lectures* at the Vanderbilt Clinic, 1 a week.

*Practical Clinical Instruction* to sections, 12 lessons to each student.

#### DISEASES OF THE SKIN.

*Clinical Lectures* at the Vanderbilt Clinic, 1 a week.

*Practical Clinical Instruction* to sections, 12 lessons for each student.

#### DISEASES OF THE THROAT AND NOSE.

*Clinical Lectures* at the Vanderbilt Clinic, 1 a week.

*Practical Clinical Instruction* to sections, 12 lessons for each student.

EXAMINATIONS upon the work of the fourth year, *including an elective course or courses ; see below.*

### Elective Courses

Each student of the fourth year will be required, within such time as shall be prescribed after the beginning of the academic year, to elect from a list of elective courses either one course or more, as shall be determined hereafter ; such election to be final.

The course or courses thus elected, the student will be required to attend, and he will be required also to be examined thereon as a prerequisite for the degree of M.D.

The elective courses will be numerous, and in various departments, both clinical and otherwise ; and the choice will not be confined to departments represented in the Faculty of Medicine, but will be extended to allied subjects.

In view of the wide range of choice thus to be provided for, no student will be admitted to any elective course unless his attainments shall be judged adequate by the head of the department in which the course is offered.

Elective courses will be organized, if possible, in the following themes or their subdivisions, and in such others as may be approved hereafter :

Surgical Diagnosis ;  
Obstetrics ;  
Diagnosis of Nervous Diseases ;  
Localization of Nervous Diseases ;  
Insanity (clinical course) ;  
Ophthalmology ;  
Venereal Diseases ;  
Therapeutics of Diseases of the Skin ;  
Contagious Diseases ;  
Microscopic Technology ;  
Pathological Anatomy and Histology of the Organs of Generation  
Pathological Anatomy and Histology of the Nervous System ;  
Cellular Biology ;  
Comparative Embryology ;  
Human and Comparative Morphology ;  
General Physiology ;  
Neuro-Muscular Physiology ;  
Physiological Technique ;  
Physiological and Experimental Psychology ;  
Philosophy ;  
Botany ;  
Chemistry ;  
Physics.

### EXAMINATIONS AND STANDING

Each student will be examined, each year, upon the work of that year.

A second examination, for candidates found deficient at the close of the first and second year's work, will be held during the week before the opening of the following session.

No student will be permitted to advance with his class from the first to the second year, unless his standing shall have been found satisfactory, before the beginning of the work of the second year, in three out of the four departments of (1) Physics and Chemistry ; (2) Anatomy ; (3) Normal Histology ; (4) Physiology.

A student found deficient in one only of the four departments of the first year, may be permitted to advance with his class, on condition that he make good his first year's standing, in the department in which he shall have failed, before being admitted to any of the examinations upon the studies of the second year held at the end thereof.

The standing of a student for the first year will be determined as follows :

1. *Physiology*, by an examination in writing upon the lectures and demonstrations of the year.
2. *Anatomy*, by (a) a record of the student's practical work during the year ; (b) a practical examination ; (c) a brief examination in writing.
3. *Normal Histology*, as for Anatomy.
4. *Physics and Chemistry* by (a) a record of the student's practical work during the year ; (b) a practical examination in Physics ; (c) a practical examination in Chemistry ; (d) an examination, in writing, in Physics and Chemistry.

A bad record of practical work in a department may bar a student from examination; or a bad practical examination may bar him from an examination in writing; the result in either case being failure in the year's work in that department.

### ADMISSION TO ADVANCED STANDING

Admission may be granted to advanced standing at the beginning of the second or of the third year, but not of the fourth year without the special consent of the Faculty.

Every applicant for advanced standing will be required (1) to present satisfactory evidence of having attended courses reasonably equivalent to those already attended by the class to which he seeks admission (see also "Graduation," p. 193; (2) to be examined for admission in all the subjects in which the said class shall have been examined already.

### TEXT-BOOKS AND INSTRUMENTS

The following list comprises the text-books and instruments recommended. The text-books are *for reference only*, unless otherwise specified in the notices of the several departments.

For the convenience of those who wish to reckon up their expenses in advance, there are appended the lowest prices at which the books, in cloth bindings can be purchased in New York. These prices are liable to fluctuations. As a rule, the latest additions only of text-books should be purchased:

Morris's Anatomy, \$6; Quain's Anatomy, not completed; Gray's Anatomy, plain, \$4.80; with colored plates, \$5.60; Dexter's Anatomy of the Peritoneum, \$1.20; Foster's Physiology, \$3.60; Fownes' Chemistry, \$2.20; *or* Newth's Inorganic Chemistry, \$1.58; Ganot's Physics, \$4; *or* Barker's Physics, \$4.50; Pellew's Medical and Physiological Chemistry, \$2; H. C. Wood's Therapeutics, \$4.80; E. Curtis's General Medical Technology, 80 cents; Warren's Surgical Pathology, \$6; Tillman's Principles of Surgery and Surgical Pathology, \$5; Treves' Manual of Surgery, \$4.80; American Text-Book of Surgery, \$7; Playfair's Midwifery, \$3.20; *or* Lusk's Midwifery, \$4; American Text-Book of Gynecology, \$6; Long's Syllabus of Gynecology, \$1; Keating and Coe's Clinical Gynecology, \$6; Duane's Medical Students' Dictionary, \$3.40; Pepper's American Text-Book of Medicine, \$10; Delafield and Prudden's Pathological Anatomy and Histology, \$4.80; Piersol's Normal Histology, \$2.80; Sternberg's Manual of Bacteriology, \$8; Abbott's Principles of Bacteriology, \$2.20; Ashby and Wright on the Diseases of Children, \$4; Henoch's Lectures on Diseases of Children, translated by John Thomson; Taylor's Venereal Diseases; Swansey's Diseases of the Eye, \$2.40; Buck's Manual of Diseases of the Ear, \$2; Crocker's Diseases of the Skin, \$4; Duhring's Diseases of the Skin, \$4.80; Hyde's Diseases of the Skin, \$4; Jackson's Handbook of Skin Diseases, \$2.20; Bosworth's Diseases of the Nose and Throat, \$9.60; Gowers' Diseases of the Nervous System, \$6.40; Dana's Text-Book of Nervous Diseases, \$2.60; Kichhoff's Handbook of Insanity, \$2.20.

A "dissecting case," containing all the necessary instruments, can be bought for from \$2.35 to \$3.35.



## CLINICS

The clinical courses offered for 1895-96 are all given under their appropriate headings in the foregoing pages, in connection with the didactic teaching.

It seems proper also to make the following connected statement of the opportunities for clinical studies in all branches which are available for matriculates of the College of Physicians and Surgeons.

When not otherwise specified, the exercise is a clinical lecture, clinical "section teaching" being noticed, in what follows, only in certain cases. For the courses in "section teaching" the reader is referred to the foregoing classified statements of instruction. At many clinics operations performed before the class are an important feature.

*All the clinical instruction for 1895-96 is in connection with the three years' course.*

## Clinics at the Vanderbilt Clinic

(See page 179)

Twelve clinics are given each week at the Vanderbilt Clinic, as follows :

SURGICAL—Professors BULL and WEIR ; Mondays, 12 M.

ORTHOPÆDIC SURGERY—Professor GIBNEY ; Fridays, 12 M.

DISEASES OF THE EAR—Professor BUCK and Dr. COWEN ; Clinical Instruction to Sections ; Mondays and Wednesdays, 2 P.M.

DISEASES OF THE SKIN—Professor FOX ; Mondays, 3 P.M.

DISEASES OF THE THROAT AND NOSE (with laryngoscopic and rhinoscopic demonstrations)—Professor LEFFERTS ; Tuesdays, 2 P.M.

DISEASES OF THE EYE—Professor KNAPP ; Tuesdays, 3 P.M.

DISEASES OF CHILDREN—Professor JACOBI ; Wednesdays, 2.30 P.M.

VENEREAL DISEASES—Professor TAYLOR ; Thursdays, 2 P.M.

MEDICAL—Professor DELAFIELD ; Thursdays, 3 P.M.

DISEASES OF THE MIND AND NERVOUS SYSTEM—Professor STARR ; Fridays, 2 P.M.

DISEASES OF WOMEN—Professor TUTTLE ; Fridays, 3 P.M.

## Hospital Clinics

*See the several departments. For appointments to the house-staffs of the hospital, see page 190.*

Besides the Vanderbilt Clinic, the general and special hospitals of New York afford most important fields for clinical teaching. This college is strongly represented on the staffs of these institutions, and regular clinical instruction at hospitals is made a prominent feature of the curriculum. *Admission is free to all matriculated students.* At all the following hospitals instruction is given by officers of the college.

SLOANE MATERNITY HOSPITAL, corner of Fifty-ninth Street and Tenth Avenue. See page 180.

ROOSEVELT HOSPITAL—This has long been the seat of thorough clinical

work, and has become of special importance in this respect from its position immediately opposite the new buildings of the College of Physicians and Surgeons upon Fifty-ninth Street, between Ninth and Tenth Avenues. Moreover, this hospital, a few years ago, received a bequest of several hundred thousand dollars for the erection and endowment of THE SYMS OPERATING THEATRE, which now offers unrivalled facilities for instruction in operative surgery.

THE MCLANE OPERATING THEATRE is used for operative gynecology by Professor Tuttle exclusively. See page 80.

The Roosevelt is a general hospital of one hundred and eighty beds, and it also possesses a flourishing out-patient department.

Public clinics are given here as follows, throughout the college session :

*Medical*—Mondays at 4 P.M., Professors DELAFIELD and DRAPER and Dr. ROOSEVELT

*Surgical*—Saturdays at 2.30 P.M., Professor MCBURNEY

*Gynecological*—Tuesdays, Thursdays, and Saturdays, at 2.30 P.M., Professor TUTTLE

NEW YORK HOSPITAL, Fifteenth Street, between Fifth and Sixth Avenues—Reached from the Medical College by taking the Sixth Avenue Elevated Railroad at the corner of Ninth Avenue and Fifty-ninth Street, and leaving the cars at the corner of Fourteenth Street and Sixth Avenue ; or by the surface-cars.

This is a general hospital of the highest class, of one hundred and fifty beds, with an out-patient department.

The public clinics are :

*Medical*—Mondays and Thursdays, at 2.30 P.M., from November to April ; Professors DRAPER and PEABODY

*Surgical*—Wednesdays, 2.30 P.M., October to February, Professor WEIR ; Saturdays, 2.30 P.M., Professors WEIR and BULL ; Thursdays, at 3.30 P.M., February to June, Dr. HARTLEY

BELLEVUE HOSPITAL, Twenty-sixth Street and East River—Directly accessible from the college by the horse-cars of the Belt Line, which run from the door of the college to that of the hospital ; or, by leaving the horse-car at the corner of Fifty-ninth Street and Third Avenue, and taking the Third Avenue Elevated train to the corner of Third Avenue and Twenty-eighth Street.

This hospital has eight hundred beds and receives sixteen thousand patients annually, of whom one fourth are in the exclusive charge of officers of this college.

The service of the out-patient department also covers a great range of practice ; and two newly built operating theatres, a large and a smaller one, are in full use.

The following clinics are held here during the session :

*Medical*—Tuesdays, 1.30 P.M., Professor JACOBI, and Drs. ROOSEVELT and JAMES

*Surgical*—Thursdays, 2.30 P.M., Drs. F. H. MARKOE and GALLAUDET

*Diseases of Children*—Tuesdays, 2.30 P.M., from April to June, Professor JACOBI

*Veneral and Genito-Urinary*—Tuesdays, 2 P.M., Professor TAYLOR

ST. LUKE'S HOSPITAL, Fifth Avenue and Fifty-fourth Street :

*Surgical*—Dr. F. H. MARKOE gives a clinic to which students are admitted on Fridays, at 2.30 P.M., from August to February.

PRESBYTERIAN HOSPITAL, Madison Avenue and Seventieth Street—Accessible from the Medical School by the Fifty-ninth Street horse-cars of the Belt Line to Madison Avenue, and by the cars on this avenue to Seventieth Street.

This is a large general hospital of three hundred and thirty beds. The following clinics will be held here throughout the session :

*Surgical*—Tuesdays, 2.30 P.M., Dr. McCOSH

*Medical*—January and February, Wednesdays, 2.30 P.M., Saturdays, 3 P.M. Professor KINNICUTT

CITY HOSPITAL (formerly CHARITY HOSPITAL), Blackwell's Island, East River—To reach this institution the steamer should be taken at the foot of East Fifty-second Street. This hospital offers a peculiarly rich field for the study of venereal and genito-urinary diseases, over two thousand such cases being received yearly. Dr. HAYDEN gives a clinic as follows :

*Venereal and Genito-Urinary*—Wednesdays, 2 P.M., from October 1st to January 1st.

WILLARD PARKER HOSPITAL, foot of East 16th Street ; reached from the medical school by the cars of the Belt Line ; RIVERSIDE HOSPITAL, North Brother Island, East River ; reached by special boat from the foot of East 138th Street.

These hospitals, in charge of the New York City Health Department, offer a rich field for the study of *Contagious Diseases* not admitted to other hospitals in the city, such as diphtheria, scarlet fever, small-pox, typhus fever, measles, and others. Dr. J. W. BRANNAN gives a clinic to which students are admitted in small sections after special registration, on Tuesdays and Saturdays, at 3 P.M., in November, December, March, and April.

NEW YORK CANCER HOSPITAL, One Hundred and Sixth Street and Eighth Avenue—Elevated Railroad station, One Hundred and Fourth Street and Ninth Avenue. It can be reached also by the Eighth Avenue surface road.

One clinic a week is held here, viz. :

*Gynecological*—Tuesdays, 9 A.M. Dr. GEO. W. JARMAN

NEW YORK OPHTHALMIC AND AURAL INSTITUTE, 44 and 46 East Twelfth Street—Reached by the Sixth Avenue Elevated train, which should be left at the Fourteenth Street station ; or by the Ninth Avenue and Broadway Cable cars.

This hospital has forty beds, and a large daily dispensary service is held for diseases of the eye and ear. Throughout the session the following clinic is held :

*Ophthalmological*—(Admission by invitation of sections.) Selected cases for diagnosis and treatment ; the most important operations on the eye. Saturdays, 2.30 to 5 P.M. Professor KNAPP

## DEMONSTRATIONS OF PATHOLOGICAL ANATOMY

Autopsies are made at the Roosevelt, New York, Bellevue, and City Hospitals during the session before the students, and usually at regular hours. The

hospital pathologists demonstrate and explain the lesions discovered. Notices of autopsies are posted upon the bulletin-board of the college.

The hours for autopsies are as follows :

ROOSEVELT HOSPITAL—2 P.M. Dr. HODENPYL

NEW YORK HOSPITAL—2 P.M.

BELLEVUE HOSPITAL—1 P.M., Dr. ELY

CITY HOSPITAL—Thursdays and Saturdays, Dr. VAN GIESON, at hours announced upon the bulletin-board.

### HOSPITAL APPOINTMENTS

By a resolution of the Commissioners of Public Charities and Correction, the Faculty of this college is entitled to nominate for appointment by the commissioners, after competitive examination in the college, its proportion of members of the house staff of Bellevue Hospital ; such members to be attached to that division of the said hospital which has been assigned to the care of the college.

Four nominations, two medical and two surgical, are made each year by the college from among its graduates under the above resolution.

One medical and one surgical assistant go on duty upon July 1st ; in the same way one medical and one surgical assistant upon January 1st.

The choice as to character of service, and the time of beginning the same, is given to the successful candidates in the order of their merit.

The surgical nominees all serve the hospital for six months in each of the four grades of ambulance surgeon, junior assistant, senior assistant, and house surgeon ; each one having thus a total of two years' experience on the " House Staff."

The medical nominees serve each in the three grades of junior assistant, senior assistant, and house physician.

Similar positions are filled twice in each year, by public competitive examinations, open to graduates of this college, in the following institutions :

The " non-collegiate " division of Bellevue Hospital ; the New York Hospital ; the Roosevelt Hospital ; St. Luke's Hospital ; the City Hospital, Blackwell's Island ; St. Vincent's Hospital ; St. Francis' Hospital ; the German Hospital ; the Mount Sinai Hospital ; the Presbyterian Hospital ; the Woman's Hospital ; the Brooklyn Hospital ; St. Catharine's Hospital, Brooklyn ; St. Peter's Hospital, Brooklyn ; the King's County Hospital, Flatbush, L. I.

### ALONZO CLARK SCHOLARSHIP

See page 27.

### FELLOWSHIPS

For the University Fellowships, see page 21.

For the Alumni Association Fellowships, see page 27.

### PRIZES

For the Harsen Prizes for clinical reports, see page 28.

For the Harsen Prizes for proficiency at examination, see page 28.

For the Alumni Association Prize, see page 28.  
 For the Cartwright Prize, see page 29.  
 For the Stevens Triennial Prize, see page 29.  
 For the Joseph Mather Smith Prize, see page 29.

## EXPENSES

See pages 18 to 20.

## BOARD

Information in regard to board can be obtained from the secretary of the Students' Movement, through the Registrar, Mr. E. T. Foag, at his office in the college. Prices range from \$5 to \$9 per week.

## CORRESPONDENCE

Letters requesting information should be addressed to Edwin B. Cragin, M.D., Secretary of the Faculty, 437 West Fifty-ninth Street, New York.

## ADMISSION

1. Applicants for matriculation who declare themselves in writing not to be candidates for the degree of Doctor of Medicine from this college are admitted, without further formality, to matriculation as special students. Such applicants cannot subsequently become candidates for graduation at this college without full compliance with the terms of admission and graduation as set forth in this catalogue.

2. To all persons who matriculate with the intention of becoming candidates for the degree of doctor of medicine *at any medical school in the State of New York*, the following provisions of law are now applicable, viz. :

FROM LAWS OF 1893, CH. 661, AS AMENDED BY CH. 938, LAWS OF 1895

*" To provide for the preliminary education of medical students :*

*" The degree of Bachelor or Doctor of Medicine shall not be conferred in this state before the candidate has filed with the institution conferring it the certificate of the regents that three years before the date of the degree he has either graduated from a registered college or satisfactorily completed a full course in a registered academy or high school ; or had a preliminary education considered and accepted by the regents as fully equivalent ; or had passed regents' examinations representing for degrees conferred in eighteen hundred and ninety-eight one year of academic work, for degrees conferred in eighteen hundred and ninety-nine two years of academic work, and for degrees conferred in nineteen hundred a full high-school course."*

## NOTES ON THE LAW\*

1. The medical student certificate must be obtained three years before the date of the degree.

\* The above rules are subject to probable change at the next meeting of the Legislature in February, 1896.



2. The regents will accept as fully equivalent to the required academic course any one of the following :

(a) A certificate of having successfully completed at least one full year's course of study in the collegiate department of any college or university, registered by the regents as maintaining a satisfactory standard.

(b) A certificate of having passed in a registered institution examinations equivalent to the full collegiate course of the freshman year or to a completed academic course.

(c) A regents' diploma.

(d) A certificate of graduation from any registered gymnasium in Germany, Austria, or Russia.

(e) A certificate of the successful completion of a course of five years in a registered Italian *ginnasio* and three years in a *liceo*.

NOTE.—Students matriculated in a registered medical school before May 9, 1893, may offer regents' pass cards for the six preliminaries and any ten academic counts ; before May 13, 1895, may offer regents' pass cards for spelling, elementary English, English composition, arithmetic, physics (part 1), geography, United States history, or any 36 academic counts.

(f) The bachelor's degree in arts or science, or substantial equivalents from any registered institution in France or Spain.

(g) Any credential from a registered institution or from the government in any foreign state or country which represents the completion of a course of study equivalent to graduation from a registered New York high school or academy or from a registered Prussian gymnasium.

#### EXTRACTS FROM RULES

*Order of studies.*—There is no restriction in the order in which studies may be taken. Advanced students who have come from other states, or who, for other reasons, have not passed in elementary subjects, may take them at any time: e. g. arithmetic after algebra or geometry ; English composition after rhetoric, etc.

*Time limit.*—There is no limit of time, but all credentials issued by the University are good till cancelled for cause. Studies necessary to obtain any credential may be passed at different examinations.

Seventy-five per cent. of correct answers is required in all subjects.

Answer papers will be reviewed in the regents' office, and all papers below standard will be returned to the candidates. For those accepted, pass cards will be issued.

Candidates not attending schools in which regents' examinations are held should send notice at least 10 days in advance, stating at what time and in what studies they wished to be examined, that required desk room may be provided at the most convenient place.

Candidates who fail to send this advance notice can be admitted only so far as there are unoccupied seats.

*Certificates without examinations.*—Candidates having credentials which can be accepted in place of an examination, should send them to the Examination

department. They will be returned as soon as verified, and if accepted the proper certificate will be sent with them.

*Sample papers.*—Calls for sample examination papers grew so burdensome that further free distribution became impracticable. All the papers for the year are mailed in paper covers for 25 cents, or bound for 50 cents. Unbound sample papers can be had for 10 cents for not exceeding 10 subjects.

The exact ground covered by these examinations is shown in the *Regents' academic syllabus* which is mailed prepaid for 25 cents.

*Medical student certificate.*—When all requirements are fulfilled, the regents grant a medical student certificate.

On receiving this certificate, the candidate must send it to the secretary or recording officer of the university or college at which he intends to study medicine.

Address all communications, Examination Department, University of the State of New York, Albany, N. Y.

### Calendar of Regents' Examinations

*For the academic year 1895-96*

	SEPT.		JAN.	MARCH	JUNE
1895	24-26	1896	27-31	23-27	15-19

NOTE.—September examinations will be held in Albany for medical and law students only, and also in New York, Syracuse, and Buffalo. Other examinations will be held at different points throughout the state. Particulars concerning these examinations may be obtained by addressing Examination Department, University of the State of New York, Albany, N. Y.

### GRADUATION

(See also "License to Practise Medicine," page 194.)

Every candidate in the four-years' course will be required, before admission to the degree of M.D. :

1. To present satisfactory evidence, as required by law, of good moral character, and of having attained the age of twenty-one years.

2. To present a "Medical Student Certificate of the Regents of the University of the State of New York," as the evidence of preliminary education required by law (see page 191).

3. To have attained to satisfactory standing in the required studies of the four years of the curriculum, including the elective course or courses chosen for the fourth year.

4. A candidate who shall have been admitted to advanced standing will be required to have spent not less than four academic years at the studies referred to in the clause next preceding ; and to have complied successfully with the requirements for admission to advanced standing set forth on page 186).

No two academic years which shall have begun during the same calendar year will be held to satisfy the requirements of the present clause.

## THE DEGREE OF MASTER OF ARTS

The degree of Master of Arts may be conferred upon students holding college degrees, who shall have completed with distinction the entire course of the School of Medicine, provided that in each case the candidate present a satisfactory dissertation, and that at least a part of the extra work required of him for the degree of Master of Arts be taken under the direction of the Faculty of Philosophy, Political Science, or Pure Science, to the extent of one minor course, for not less than one year.

## LICENSE TO PRACTISE MEDICINE

The following extracts from the law regulating the practice of medicine in the state of New York are printed for the information of such graduates and students as may intend to practise medicine in this state :

### REQUIREMENTS FOR LICENSE TO PRACTISE MEDICINE IN NEW YORK STATE

*All requirements for admission should be completed at least one week before examinations.*—They are as follows :

1. Evidence that applicant is more than 21 years of age.
2. Certificates of moral character from not more than two physicians in good standing. (Form 2.)
3. Evidence that applicant has the general education required, preliminary to receiving the degree of Bachelor or Doctor of Medicine in this state (medical student certificate).

*First exemption :* " Students who had matriculated in a New York medical school before June 5, 1890, shall be exempt from this preliminary education requirement, provided the degree be conferred before August 1, 1895." (Form for exemption certificate furnished on application.)

4. Evidence that applicant " has studied medicine not less than three full years, including three satisfactory courses, in three different academic years, in a medical school registered as maintaining at the time a satisfactory standard."

*Second exemption :* " The regents may in their discretion accept as the equivalent for any part of the 3d and 4th requirement, evidence of five or more years' reputable practice of medicine, provided that such substitution be specified in the license."

5. Evidence that applicant "has received the degree of Bachelor or Doctor of Medicine from some registered medical school, or a diploma or license conferring full right to practise medicine in some foreign country."

6. The candidate must pass examinations in anatomy, physiology, and hygiene, chemistry, surgery, obstetrics, pathology and diagnosis, and therapeutics, practice and materia medica. The questions "shall be the same for all candidates, except that in therapeutics, practice and materia medica, all the questions submitted to any candidate shall be chosen from those prepared by the board selected by that candidate and shall be in harmony with the tenets of that school as determined by its state board of medical examiners."

*Third exemption:* "Applicants examined and licensed by other state examining boards registered by the regents as maintaining standards not lower than those provided by this article, and applicants who matriculated in a New York state medical school before June 5, 1890, and who receive the degree of M.D. from a registered medical school before August 1, 1895, may without further examination, on payment of \$10 to the regents and on submitting such evidence as they may require, receive from them an indorsement of their licenses or diplomas conferring all rights and privileges of a regents' license issued after examination."

7. A fee of \$25, payable in advance.

#### NOTES ON THE LAW

1. Seventy-five per cent. of correct answers is required in all subjects.
2. All subjects must be passed at the same examination.

NOTE.—When a candidate for license has been rejected in but *one* topic and his total average is at least 80, at subsequent examinations he shall be examined only in the topic in which he originally failed to receive the required (75) percentage.

3. All examinations must be conducted in the English language.
4. Medical preparatory courses, as such courses are now taught in various scientific schools and colleges, cannot be accepted for one year of the three years' medical study required by the law.

#### Medical Examinations

Examinations for license to practise medicine in this state will be held as follows :

DATES	PLACES
1896	
Jan. 28-31	New York.
April 7-10	Albany.
May 19-22	Syracuse.
June 16-19	Buffalo.
	Each candidate is notified as to exact place.

## DAILY PROGRAMME

	Morning 9.15-12.15.	Afternoon 1.15-4.15
<i>Tuesday</i> . . .	Anatomy. . . .	Physiology and Hygiene.
<i>Wednesday</i> . . .	Chemistry. . . .	Surgery.
<i>Thursday</i> . . .	Obstetrics. . . .	Pathology and Diagnosis.
<i>Friday</i> . . .	Therapeutics. . . .	—

### Powers and Duties of County Clerks in Registering Licenses to Practise Medicine in New York State

The laws relating to registration of physicians by county clerks were repealed May 9, 1893, when the new law took effect. This law forbids the registration of any authority to practise medicine except a license or diploma issued or indorsed as a license under seal by the University of the State of New York, or (in case of removal to another county of a physician already licensed) a certificate clearly showing that the original registration was of an authority issued or indorsed under seal by the regents.

To provide against penalties for illegal registration all other cases should be referred to the University of the State of New York, the only authority by which licenses can be issued after September 1, 1891.

Address all communications, Examination Department, University of the State of New York, Albany, N. Y.

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## REGISTER OF STUDENTS

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NAME	RESIDENCE
Truman Abbe, A.B. ....	Washington, D.C.
Edward Adams.....	Connecticut
Walter Sawyer Adams, A.B.....	Massachusetts
Marian Samuel Adler.....	New York City
Maximilian Louis Adler, B.S.....	New York City
William Adler.....	New York City
Lewis Paddock Addoms.....	Brooklyn, N. Y.
Isidoro Agostini.....	New York City
Isaac Alkus.....	Brooklyn, N. Y.
William Hanford Allée, Jr.....	Brooklyn, N. Y.
Carl Lucas Alsberg.....	New York City
Raul Amador.....	U. S. of Colombia
George Anderson.....	New York
Samuel Ansbacher, B.S.....	New York City
Charles Leonard Antony.....	New York City
Hermann Nehemiah Appel.....	Brooklyn, N. Y.
John Aquaro.....	New York City
Thomas Shaw Arbuthnot, A.B.....	Pennsylvania
William Henry Areson.....	New Jersey
William Buckingham Armstrong.....	Georgia
Edward Aaron Aronson.....	New York City
Charles Lewis Atkinson.....	Brooklyn, N. Y.
Alonzo Eugene Austin, Jr.....	New York City
Oliver Luther Austin.....	New York
Joseph Walter Babcock.....	New York City
Frederick Randolph Bailey, A.B., A.M., M.D.....	New Jersey
Theodorus Bailey, B.S.....	New York City
Addison Waddell Baird.....	New York City
Raymond Lent Baker.....	New York
William Hayden Baker, A.B. ....	New York
Charles Everett Banker, A.B.....	New York City
Wesley Tarver Banks, A.B. ....	Alabama
Harold Barclay.....	New York
Archie Henry Barkley.....	Kentucky
George Edward Barnes, A.B.....	New York
Edward Leroy Barnett, B.S.....	New York

NAME	RESIDENCE
John Hendley Barnhart, A.M.....	New York
Thomas William Barrett.....	Oregon
Thomas Joseph Barry.....	New York City
Samuel Barshell.....	New York City
Walter Arthur Bastedo, Ph.G.....	Canada
John Reckab Baxter, Jr.....	New York
Philip Francis Bayard.....	Delaware
Edwin Beer.....	New York City
Max Benjamin.....	New York City
Harry Raymond Bennett.....	Connecticut
Reginald Sidney Bennett.....	New Jersey
Jacob Isaac Bergen.....	Brooklyn, N. Y.
Joseph Vincent Bergin.....	New Jersey
Edward John Bero.....	New York City
Charles White Berry.....	New York City
Leonard Cassell Berry.....	New York City
Charles Sweetser Benson.....	New York City
Charles Sylvester Bentley.....	New York City
Frederick Leslie Benton.....	Brooklyn, N. Y.
Horace Bigelow, A.B.....	New York City
Arthur Walter Bingham, B.S.....	New York City
James Birkhead, A.B.....	New York City
Albert George Bising, A.B.....	New Jersey
Harry Llewellyn Bixby, A.B.....	California
John Stanton Blackmar.....	Connecticut
Edward Blaise.....	Brooklyn, N. Y.
James Eddy Blake, B.S.....	Brooklyn, N. Y.
Theodore Edward Bleick.....	New Jersey
Horace Bernard Blan.....	New York
Jesse Leonti Bliss.....	New York City
John Henri Blot.....	New York City
Edward Augustus Blount, Jr.....	Texas
Henry Julius Blumensohn, B.S.....	New York City
Alfonse Michael Bodden, A.M.....	Wisconsin
Louis Albert Sayre Bodine.....	New York City
Dominic George Bodkin.....	Brooklyn, N. Y.
Belmont de Forest Bogart.....	New York
Charles Herbert Borden.....	New York
Matthew Sterling Borden, A.B.....	New York
John Gerard Louis Borgmeyer.....	New Jersey
John Francis Bourke.....	New York City
Leon Bowman.....	New York City
Gail Glen Bowman.....	Pennsylvania
August Samuel Boyd.....	U. S. of Colombia
Arthur Irving Boyer.....	New York
Jay Aloysius Boyle.....	Pennsylvania

NAME	RESIDENCE
Charles Edward Boynton, A.B.	Georgia
Frederick Clark Bradner, A.B.	New York
Frederick Brady	New York City
Julian Walter Brandeis, B.S.	New York City
Charles Louis Adrien Brasseur	New York City
Mordecai Robert Bren	New York City
James Henry Brennan	New York
Marks Bresler	New York City
Walter Max Brickner, B.S.	New York City
James Francis Briody	New Jersey
John I. Broach	Brooklyn, N. Y.
Edward Manning Brown, Ph.B.	Massachusetts
George Brown	New York City
Paul Richard Brown, Jr.	New York
Robert Coalter Bryan	Virginia
Charles Frederick Buckley, A.B.	Brooklyn, N. Y.
Frank Thomas Budd	Pennsylvania
William Buermann	New Jersey
Ralph Edward Buffington	New Jersey
Clarence Perciville Bulson, Ph.G.	New York
Franklin Bullwinkle	Brooklyn, N. Y.
Maynard Gooding Burgess	Cuba
Oscar Augustus Burton	Minnesota
Archibald Henry Busby	New York
William Caldwell Calhoun	New York City
Clarence Wellington Campbell	New York City
Horace Campbell	New York City
James Edward Campbell, Ph.B.	New York City
Ransford De Los Canedy	Massachusetts
George Arthur Carhart, B.S.	Wisconsin
Spencer Carleton, A.B.	New York City
John Alling Card	New York
Joseph Stanislas Carreau, M.D.	New York City
James Peter Casazza, Ph. G.	New York City
Abram Caspe, A.B., B.S.	New York City
Douglas Aymar Cater, B.S.	New York City
Herbert Richard Charlton	New York
Horace Chenery	Maine
William Samuel Cherry	New York City
Albert King Chipp	New York City
Edgar Eynon Chivers	Brooklyn, N. Y.
Arthur Hutchins Cilley, A.B.	New York City
Abram Schuyler Clark, B.S.	New Jersey
James Bayard Clark	New York City
Arthur Vernon Clarke	Canada
Henry, Elisha Clarke	New York
Stephen Tallmadge Carter, B.S.	New Jersey
George Montgomery Chamberlin, Jr.	Illinois

NAME	RESIDENCE
William Cogswell Clarke.....	New York
Samuel Cochran, A.B.....	New Jersey
Augustus Cohen.....	New York City
Martin Cohen.....	New York City
Lewis Gregory Cole.....	Brooklyn, N. Y.
Dan Coe Coleman.....	New York City
James Cantine Coles.....	New York
John James Collins, A.B.....	Massachusetts
James Bronson Conant, A.B.....	New York
Edward Joseph Connell, Jr., A.B.....	New York City
John Hamilton Potter Conover, A.B.....	New Jersey
Herbert Sutherland Cooley.....	New York
Horace Cortelyou Cory.....	New Jersey
John James Cotter.....	Massachusetts
Rowland Cox, Jr.....	New York City
Henry Maclean Crawford.....	New York City
William Barren Crawford.....	Georgia
George Mason Creevey, A.B.....	New York City
Willaim Daniel Cronin.....	Connecticut
Frederick Wallace Culler, Ph.G.....	New York City
Edward Otis Cummings.....	New Jersey
Harold Hammond Cummings.....	New Jersey
John Joseph Cummings.....	Massachusetts
Arthur Ward Cutler.....	New York
Robert Morris Daley.....	New York
Frederic Louis Darbonnier.....	New York
John MacBain Davidson.....	New York City
Fellowes Davis, Jr.....	New York City
William Patrick Davis.....	Canada
William Joseph Leo Davis.....	New Jersey
Hughes Dayton, Ph.B.....	New York City
Cornelius Schenck De Bevoise.....	Brooklyn, N. Y.
Howard de Forest, B.S.....	New York City
Pedro de Obarrio.....	U. S. of Colombia
Léon Joly de Sabla.....	New York City
William Gordon Dice, A.B.....	New York City
Joseph Milton Dill, Jr.....	Illinois
Joseph Dillenberg, B.S.....	New York City
Lawrence George Distler.....	New York
Joseph Smith Dodd.....	New Jersey
Patrick George Donovan.....	New York
Franklin Abbott Dorman, A.B.....	New Jersey
Francis Oswald Dorsey, A.B.....	Indiana
William John Dougherty.....	New York

NAME	RESIDENCE
Isaac Linton Doughty, Jr.....	Brooklyn, N. Y.
John Douglas, B.S.....	New York City
Mortimer Byron Downer.....	New York
Frank Chase Downing.....	New York
Augustus Sherman Downs.....	New York
Arthur David Dryfoos, A.B.....	New York City
Charles Francis Durning, A.B.....	Massachusetts
Joseph Osterman Dyer, Ph.B., LL.B.....	Texas
Olin Martin Eakins.....	New Jersey
William Petry Earl.....	New York
John S. Easton, A.B.....	Pennsylvania
William Gustav Eckstein.....	New York City
Francis Cruger Edgerton, B.S.....	Connecticut
Ogden Matthias Edwards, Jr., B.S.....	Pennsylvania
Jacob Eisenstadt.....	New York City
Eugene Harold Eising, B.S.....	New York City
Herbert Henry Ellis.....	New York
Haven Emerson.....	New York City
Robert Emmet.....	New York City
Floyd Bonesteel Ennist.....	New York City
Charles Henry Enos, Jr.....	New York City
Edgar Horace Farr, A.B.....	Vermont
Alfred Barker Fassett.....	New York
Joseph Whittlesay Fauntleroy, M.D.....	Virginia
Burr Ferguson, A.B.....	Alabama
Carl Ferdinand Hermann Fischer.....	Brooklyn, N. Y.
James Turner Biddulph Fisher, A.B.....	New York City
Charles Wilmer Fitch, A.B.....	New York
Peter Leo FitzSimons.....	New York City
Charles Francis Fitzgerald, A.B.....	Massachusetts
Rolfe Floyd, A.B.....	New York City
Joseph Norman Fogarty.....	Florida
John Philip Foley.....	New York
Sherman Knevals Foote, A.B.....	New York City
Howard Sinnickson Forman, B.S.....	New Jersey
George Howard Fox, A.B.....	New York City
Robert Lachlison Fox, M.D.....	Georgia
Isaac Frankenstein.....	New York City
Benjamin Butler Frankle.....	Colorado
Charles Moore Franklin, A.B.....	Alabama
Joseph Anthony Frasier.....	Massachusetts
Maurice Friedman.....	New York City
Andrew Suydam Fritts.....	New Jersey
William Francis Fuchs.....	Brooklyn, N. Y.



NAME	RESIDENCE
Reginald Furman, A.B.....	New York City
Arthur Henry Gardner.....	Massachusetts
Frederick Siebert George.....	New York
Ennis Ignatius Geraghty.....	New York City
John Edgar Getman.....	New York
Harold Carl Geyer.....	New York City
James Patrick Gilligan.....	Pennsylvania
Andrew James Gilmour, Ph.B.....	New York
Ralph Henry Goldberg.....	New York City
Adolph Goldhammer, B.S.....	New York City
Sydney Ormond Goldman.....	New York City
Carl Goldmark.....	New York City
Ignatius Loyola Goodfried.....	New York City
Henry Goodfriend.....	New York City
Charles Augustus Goodrich, B.S.....	Connecticut
Malcolm Goodridge, A.B.....	New York
Alfred Louis Moreau Gottschalk.....	New York City
Everett Willoughby Gould.....	New York City
Herman Rudolph Alexander Graeser, Ph.G.....	New York City
Charles Theodore Graham-Rogers.....	New York City
Arthur Rogers Grant.....	New York
Alfred William Gray, A.B.....	Wisconsin
John William Gerhard Greeff.....	New York
Charles William Green.....	New Hampshire
Nathan Williams Green, A.B.....	New York City
Clarence Albert Greenleaf.....	New York
Chauncey Boyd Griffiths, A.B.....	New Jersey
Joel Grosner.....	New York City
John Conrad Gross.....	New York City
Moritz Gross.....	Massachusetts
Samuel Bates Grubbs, A.B.....	New York City
Leopold Frederick William Haas, B.S.....	New York City
Charles Alfred Haffner, A.B.....	New York City
Walter Penrhyn Hailey.....	Indian Territory
Henry Ewing Hale, Jr., A.B.....	New York City
Myron Foster Hall.....	New York
George Tillinghast Hammond.....	Brooklyn, N. Y.
James Taylor Hanan.....	Brooklyn, N. Y.
John Henry Bray Hanify.....	New York City
Ellwood Harlow, A.B.....	New York City
Henry Clinton Hatton.....	Brooklyn, N. Y.
Louis Hauswirth, B.S.....	New York City
Reed Ferris Haviland.....	New York
John Francis Hawley, C.E.....	Central America
Robert Hollingsworth Gray, M.D.....	Louisiana

NAME	RESIDENCE
Ruben Johnson Held.....	New York City
Clifford Wood Hendrickson.....	New York
Edmund Taylor Henry.....	New Jersey
Franklin Miller Herman.....	New York
William Post Herrick, A.M.....	New York City
William Leo Hetherington.....	New Jersey
Harold Edmonds Hewlett, Ph.B.....	New York
Elias Pierre Hicks.....	New York
Charles Edward Hine.....	New York City
Roy Seymour Hinsdale, A.B.....	New York
William Cott Hobdy, B.S.....	Kentucky
Fenimore Cooper Hoke.....	New York
Edgar Holden, Jr., A.B.....	New Jersey
John Horni, Ph.G.....	Brooklyn, N. Y.
Charles Beardsley Horton.....	New York City
Charles James Howard.....	Rhode Island
Edgar John Howarth.....	New York
Henry Newell Howe.....	Massachusetts
Ernest Valentine Hubbard, A.B.....	New York City
Charles Huber, Ph.G.....	New York City
Frederick William Huber.....	New York City
Frederick John Hughes.....	New Jersey
John Lawrence Hughes.....	New York City
George John Hugo.....	Connecticut
Harry Richard Humphries.....	New York City
Oliver Paul Humpstone.....	Brooklyn, N. Y.
Charles Frederick Hunt.....	New York
Edward Livingston Hunt, A.B.....	New York City
Elon Obed Huntington, B.S.....	Minnesota
Augustus Alphonso Hussey, A.B.....	Maine
James Hutchison, A.M., M.D.....	New York City
Robert Morton Hutton.....	New Jersey
Benno Hyams.....	New York City
Harry Warrington Ingling.....	New Jersey
William de Forest Ireland.....	New York City
Sherwood Bissell Ives, A.B.....	New York City
Charles William Ivie, A.M.....	Brooklyn, N. Y.
Elias Simeon Jackson.....	New York City
Joseph Morris Jackson.....	Pennsylvania
Reginald Henry Jackson.....	Wisconsin
William Ketchum Jacobs.....	Brooklyn, N. Y.
Charles Herman Jaeger.....	New York City
Henry Harrington Janeway, A.B.....	New Jersey
Benjamin Yeager Jaudon.....	Missouri

NAME	RESIDENCE
Smith Ely Jelliffe, M.D.....	New York City
Ernest Potter Jenks, A.B.....	New York City
John Edward Jennings.....	Brooklyn, N. Y.
Daniel Herbert Johnson.....	Ohio
Edward West Johnson.....	New Hampshire
William Gaston Johnson.....	New Jersey
William Throckmorton Johnson, A.B.....	New Jersey
John Morgan Jones.....	New Jersey
Franklin Miter Jones.....	New York City
Charles Samuel Josephs.....	New York City
Homer Thrall Joy, A.B.....	New Jersey
Aspinwall Judd.....	New York City
Herman Judkowitz.....	New York City
Charles Joseph Kane, A.B.....	New Jersey
William Lawrence Kantor.....	New York City
Morris Nathan Karash.....	New Jersey
Ernest Kaufman.....	New Jersey
James Edward Keegan.....	New Jersey
Kenneth Evernghim Kellogg.....	Connecticut
Henry Thomas Kelly.....	New York City
Robert Dalton Kelly.....	Tennessee
Leo Eugene Joseph Kennedy, A.B.....	Brooklyn, N. Y.
James Henry Kenyon, B.S.....	New York
Marcus Kenyon, M.D.....	New York City
Karl Richard Keppler.....	New Jersey
Moses Keschner.....	New York City
Eugene George Kessler, Ph.G.....	New York City
Sumner Butler Banks Kingsley.....	New York
Allan Stewart Kirkwood.....	New York
Felix Kleeberg, Ph.B.....	New York City
Walter Leo Kline, A.B.....	Ohio
Walter Carl Klotz.....	New York City
Frank Henry Knight.....	Brooklyn, N. Y.
Charles Platt Knowles.....	New York
Albert Edwin Koonz, D.D.S.....	New Jersey
Samuel Joseph Kopetzky.....	New York City
George William Kosmak, A.B.....	New York City
Theodore Morse Koupal.....	New York City
Henry Kreuder, Ph.G.....	New York City
Carl Henry Kroeber.....	New York
John Kurrus.....	New Jersey
Adrian Van Sinderen Lambert, A.B.....	New York City
Edward Rutledge Lampson, Jr., A.B.....	Connecticut
William Judson Lamson, A.B.....	New York City
Stephen Arthur Krom.....	New Jersey

NAME	RESIDENCE
William Remsen Lane, A.B.	New Jersey
Gustav Langmann, M.D.	New York City
Sidney Locock Lassell, A.B.	New York City
William Henry Lawrence, Jr.	New Jersey
Leonidas Moreau Lawson, Jr.	New York City
Daniel Wunderlich Laymen, B.S.	Indiana
Medwin Leale, A.B.	New York City
Prescott Le Breton, A.B.	New York City
Emanuel David Lederman	New York City
Burton James Lee, Ph.B.	Connecticut
George Bolling Lee	Virginia
Harry Mower Lee	Connecticut
Henry Thomas Lee	Minnesota
Oscar Leiser	New York
John Leshure	Massachusetts
Mozart Monae Lesser	New York City
Hugo Adolf Levison	New York City
Dean Dewitt Lewis, A.B.	Illinois
George Washington Lindheim	New York City
Arthur Maxwell Line, A.B.	New York City
George French Little, A.B., M.D.	Brooklyn, N. Y.
Horace Ruthaford Livengood	New Jersey
William Henry Lloyd	New York City
John Othello Logan	New York City
William Henry Long, Jr.	New Jersey
Eli Long, Jr., A.B.	New Jersey
John Franklin Loudon	New York
Arthur Jewett Lougee, A.B.	New Hampshire
Robert Livingston Loughran, A.B.	New York
F. Percival Loughran	New York
Lionel Hartsfield Love	North Carolina
Joseph Tompkins Low, Jr., B.S.	New York City
Victor Lowenstein	New York City
George Floyd Ludlow	New York
Reuben Moffatt Lusch	Brooklyn, N. Y.
Harry Stoddard Lyman, A.B.	Nebraska
Charles Willard Lynn	New York City
Palmer Heath Lyon	New York City
John James Lyons	Brooklyn, N. Y.
William Wallace Mac Alister	New Jersey
Henry Alexander Mac Gruer	New York
Walter Fullarton Macklin	New York City
James Wright Mac Nider	New York City
John Silliman Macnie, A.B.	North Dakota

NAME	RESIDENCE
George Sturtevant Macpherson, A.B., M.D.....	Massachusetts
Edward O'Reilly Maguire .....	Connecticut
Bartholomew Edward Mahaney.....	Massachusetts
Frank Wickham Mallalieu, B.S.....	New Jersey
Edward Robert Maloney .....	Connecticut
Leopold Marcus.....	New York City
David Trumbull Marshall.....	New Jersey
Gabriel Martinez.....	Central America
Eugene Aloysius Marx.....	New York City
James Thomas McCabe.....	New York City
John Aloysius McCafferty, A.B.....	New York City
Edward John McCarthy.....	Connecticut
Frank Joseph McCarville.....	New York City
Robert McCastline .....	New York City
Harvey McCloughan.....	New Jersey
Arthur Thomas McCormack, A.B.....	Kentucky
Roy Langdon McDermott.....	New Jersey
William McDonald, Jr., B.P.....	New York
Hugh Farber McGaughey, B.S.....	Minnesota
Fred Lyman McKee.....	Ohio
John Joseph McKenna.....	New York City
Wharton Bird McLaughlin.....	Texas
Alfred Jewett McLean.....	New York City
Harlow Comstock McLeod.....	Brooklyn, N. Y.
Thomas William McManus.....	New York City
William Righter McNair.....	Pennsylvania
John English McWhorter.....	New York
Edwin Marcus Mendel, A.B.....	New York City
Howard Valentine Merrell.....	New Jersey
William J. Mersereau.....	New York
Albert Salomon Meyer.....	New York City
Leo Bernard Meyer, A.B.....	New York City
Alfred Michaelis, A.B.....	New York City
John Izard Middleton, Jr., A.B.....	New York City
Albert Miller .....	New York City
Albert Hersey Miller, A.B.....	Maine
Edward Ira Miller.....	New Jersey
Ethelbert Wesley Miller.....	New Jersey
Guy Bryan Miller, A.B.....	New York City
James Alexander Miller, A.B.....	New Jersey
Jesse Preston Miller, A.B.....	South Carolina
Richard Thomas Miller.....	New York City
Roger Harrison Miller, Ph.B.....	New York City
Samuel Osgood Miller .....	Massachusetts



NAME	RESIDENCE
Edward Elbert Mitchell, A.B.....	New York
Robert Jack Mitchell.....	New York City
William Elphinstone Keith Mittendorf.....	New York City
Augustin Joseph Molloy.....	New York
Browne Morgan.....	New Jersey
Edward Moriarty.....	Connecticut
William Thomas Morrison, B.S.....	New Jersey
George Westlake Morse.....	New York
Henry Perkins Moseley, A.B.....	New York City
L. Howard Moss.....	Canada
Emil Alfred Müller.....	New York City
Adolph Mund, Ph.G.....	New York City
Frank Worman Myrick.....	New York
John William Nelson, A.B.....	New York City
Frederick Emil Neresheimer.....	New York
Robert Henry Nesbitt.....	West Virginia
Irving La Field Nettleton.....	Connecticut
Denwood Norval Livingstone Newbury.....	New York City
Pincus Newman.....	New York City
Lorenzo Miller Nickerson.....	Brooklyn, N. Y.
Robert Ernest Noble, M.S.....	Alabama
Henry Nolte.....	Wisconsin
Carl Jonas Ericsson Nordstrom.....	New York City
Edward Genung Nugent, A.B.....	New York
John Hilbert Oberle.....	New York City
Francis Jeremiah Vincent O'Brien, A.B.....	New York
Joseph Henry O'Connell, A.B.....	Massachusetts
Charles George O'Connor, A.B.....	Brooklyn, N. Y.
James Henry O'Connor, A.B.....	Massachusetts
James Ogilvie, A.B.....	Massachusetts
Alfred Townsend Osgood, A.B.....	New York
Charles Ray Otis.....	New York
Frank Burton Otis, A.B.....	Massachusetts
Frederic Francis Owens, A.B.....	Massachusetts
Henry Farrer Owsley, Ph.G.....	Ohio
Frederick Chauncey Paffard.....	Brooklyn, N. Y.
William Adelbert Page.....	Pennsylvania
Frank Elmer Pagett.....	New York City
Wesley Everette Paisley.....	New York City
Edwin Obediah Palmer.....	New York
Edward Oliver Parker, A.B.....	New York City
George Mitchell Parker, A.B.....	Ohio
William Anderson Payne.....	Virginia
Victor Cox Pedersen, A.B.....	New York City

NAME	RESIDENCE
George Oscar Pelgram .....	New York City
Henry Hubbard Pelton, A.B. ....	Connecticut
Judson Philbrook Pendleton .....	Maine
George Alexander Phelps, A.B. ....	Connecticut
Frederick Harrison Pierson, Jr., B.S. ....	New Jersey
Antonio Davide Pisani, Ph.G. ....	New York City
Charles Whitney Pollard, A.B. ....	New York City
Nelson Asa Pomeroy .....	Connecticut
Eugene Hillhouse, Pool, A.B. ....	New York
Palmer Augustus Potter .....	New York City
Albert Ward Preston, A.B. ....	Maine
Edgar Burton Probasco .....	New York
Norman Hayes Probasco .....	New Jersey
Tappan Chase Pulsifer, A.B. ....	Maine
Immanuel Pyle .....	New Jersey
George Gibier Ramband, Jr. ....	New York City
Edwin Thompson Randall .....	Brooklyn, N. Y.
Arthur Lynnewood Reeve .....	Brooklyn, N. Y.
William Stewart Reoch, B.P. ....	Rhode Island
Louis Reynolds .....	New Jersey
Strother William Rice, A.B. ....	New Jersey
Montrose Reuben Richard, M.D. ....	New York City
Dudley de Vore Roberts .....	New Jersey
Jonathan Manning Roberts .....	New Jersey
Joseph Robinson, Jr. ....	Connecticut
Joseph Roby, A.B. ....	New York
Albert Vincent Rockwell .....	New Jersey
Harry Heth Rodman .....	New York City
Mariano Rodriguez, A. ....	Costa Rica
William Benjamin Roemer .....	New York
Augustine Ward Roff, Jr. ....	New Jersey
John Albert Ronayne, A.B. ....	Massachusetts
Stephen White Roof .....	New York City
Edward Francis Rorke .....	Brooklyn, N. Y.
William Henry Rorke .....	Brooklyn, N. Y.
Malcolm Cameron Rose, Ph.G. ....	New York City
Edward Aaron Rosenberg .....	New York City
Maurice Rosenberg .....	New York City
Charles Adolph Rosenwasser .....	New York City
Clark Green Rossman, C.E. ....	New York
Thomas Albert Rothwell .....	New York City
Edward Everett Rowell, Jr. ....	Connecticut
Henry Clay Ruhl, A.B. ....	New York City
Emil Albin Rundquist, B.S. ....	New York City

NAME	RESIDENCE
Tracy George Russell, A.B.	California
William Marcus Russell	Brooklyn, N. Y.
Anthony Alexander Rutz, A.B.	Brooklyn, N. Y.
George Hope Ryder, A.B.	New Jersey
Walter Gohring Ryon	New York
Stanley Owen Sabel	Kentucky
Philip Schieffelin Sabine, A.B.	New York City
Juan Bautista Sacasa	Central America
Moses Sahud	New York City
William Salant, B.S.	New York City
Trafford Brasee Salisbury	New York City
George Reese Satterlee, A.B.	New York City
George Alexander Saxe	New York City
Peter Schaeffler, Jr.	New York City
Philip Michael Schaffner	Brooklyn, N. Y.
Robert McEwen Schauffler, A.B.	Missouri
Michael Schiller, B.S.	New York City
Winfield Scott Schley, Jr., A.B.	New York City
Charles Henry Schlichter, Ph.G.	New Jersey
William Augustus Muhlenberg Schneck	New York City
Warren Schoonover, Jr.	New York City
Alfred Schwab	New York City
Samuel Emanuel Schwartz	New York City
Herman Schwarz	New York City
Charles Edward Scofield	Brooklyn, N. Y.
John William Scott, A.B.	Kentucky
Ambrose Alfonse Scouler, A.B.	New York
Daniel Joseph Scully, Jr.	Brooklyn, N. Y.
Edgar Calvin Seibert	New Jersey
John Conlay Selby	New York City
George Henry Semken	New York City
Joseph Minnelli Severino	New York City
Raymond Wilbur Shattuck	New York City
James Daniel Shea	Brooklyn, N. Y.
Peter Owen Shea, A.B.	Massachusetts
John Lawrence Sheils	New York City
Lucian Herbert Shepherd, M.D.	New York
Walter Aikman Sherwood	New York City
John Aloysius Shields	Brooklyn, N. Y.
Francis Eppes Shine, M.D.	Florida
Alfred Edward Shipley	Brooklyn, N. Y.
Russell Aber Shirrefs	New Jersey
Albert Franklin Shrier	New York City
Montgomery Hunt Sicard, B.S.	Brooklyn, N. Y.

NAME	RESIDENCE
Eli Sickie.....	New Jersey
Theodore William Simon.....	New York City
Edward Henry Harriman Simons.....	New York City
Daniel Alison Sinclair.....	New York City
John Creswell Slawson.....	New York
Walter Thomas Slevin.....	Brooklyn, N. Y.
Thomas George Sloan.....	Connecticut
Harry Victor Smith.....	New Jersey
John Archibald Smith.....	New York
Letchworth Smith, A.B.....	New York
John Beach Solley, Jr., A.B.....	New York City
Paul Frederick Sondern.....	Brooklyn, N. Y.
Michael Sophian.....	New York City
Frederick Hessler Sparrenberger.....	New Jersey
Frederick Hallett Spencer.....	New York
Shirley Erving Sprague.....	New York City
Amos Osborne Squire.....	New York
Harry Grant Stafford.....	New York City
Frank Munson Staggs.....	New Jersey
Louis Loyall Staib.....	New Jersey
Meyer Maurice Stark, A.B.....	New York City
Charles Daniel Steenken, A.B.....	Brooklyn, N. Y.
Victor Steinberger, A.B.....	New York City
Abram Richard Stern.....	New York City
Max Stern.....	New Jersey
Samuel Stern.....	New York City
Robert Stevenson.....	Brooklyn, N. Y.
Harry Gifford Steward.....	Connecticut
Archibald Wilson Stiles.....	New York
Harry Wilson Stiles.....	Missouri
Richard Stinson.....	New Jersey
Henry Stock, B.S.....	New York City
James Graham Phelps Stokes, Ph. B.....	New York City
Squire Wilbert Stone.....	New York City
Charles Waldron Storke.....	New York
Walter Whitcomb Strang.....	New York City
August Adrian Strasser.....	New Jersey
Fred Strauss.....	New York City
Israel Strauss, A.B.....	Rhode Island
George Linius Streeter, A.B.....	New York
Rae Latham Strong.....	New York
Samuel Meredith Strong.....	New York
Carlyle Edgar Sutphen, Jr., A.B.....	New Jersey
Edward Forrester Holden Sutton, A.B.....	New York City
Adam Henry Straub, M.D. - - - - -	Brooklyn N. Y.

NAME	RESIDENCE
James Robert Swanick.....	New York
Dennis Joseph Sweeney.....	Brooklyn, N. Y.
Richard Edward Sweeney.....	New York City
Samuel Aaron Tannenbaum.....	New York City
John Mortimer Taylor, A.B.....	New York
Joseph Charles Taylor.....	New York
Lloyd Blackwell Taylor .....	New York
Jonathan Edwards Tefft, Jr.....	Missouri
Arthur Henry Temple.....	New Jersey
Arthur Seymour Tenner, A.B.....	New York City
William Stoutenborough Terribery, A.B.....	New York City
Joseph Cheesman Thompson.....	New York
Edward Osgood Thorn.....	New York
Moses Thorner.....	Georgia
Josiah Payne Thornley, M.D.....	New York City
Frederick Tiedemann, Jr.....	New York
Myles Joseph Tierney, A.B.....	New York City
Frank Edward Tompkins.....	New York City
Ralph Tousey, A.B.....	New York City
Robert Storer Tracy, A.B.....	New York City
Leslie Allin Turner.....	Brooklyn, N. Y.
Percy Rivington Turnure, A.B.....	New York City
Guy Hanford Turrell, A.B.....	New York City
John Fogg Twombly, A.B.....	New York City
Sidney Ulfelder, A.B.....	New York City
Albert Eckhardt Ullman.....	New York City
James Samuel Unger .....	New York City
Adolph Urban, B.S.....	New York City
Ignacio Vado, Jr., A.B.....	Mexico
Herbert Bailey Vail, A.B.....	New York
Charles Van Bergen.....	New York City
William Percy Van Ness.....	New York
Frank M. Van Orden, A.B.....	New York
Philip Schuyler Van Patten.....	New York City
Albert Myers Van Sickle, Ph.G.....	New York
Clarence Mansfield Van Syckle.....	Brooklyn, N. Y.
Henry Palmerston Vaughan, A.B. ....	New York City
William Welsh Vibbert, A.B.....	New York City
Frederic Oakman Virgin, A.B.....	New York City
Raymond Lynde Wadhams, A.B.....	Pennsylvania
Augustus Baldwin Wadsworth, B.S.....	New Jersey
Adolph Louis Waechter.....	New York City
Jonathan Mayhew Wainwright, A.B.....	Connecticut
Fred Symonds Wakefield, A.B.....	Maine



NAME	RESIDENCE
Charlton Wallace, A.B.....	Kentucky
Fred Cole Wallin.....	New York
Frederic Theodore Walser.....	New York
George John Wardenburg, A.B.....	Brooklyn, N. Y.
George Linden Warren.....	New Jersey
Henry Stanley Warren.....	Maine
Ernst Coniston Waterhouse, A.B.....	Hawaii
Warren Gookin Waterman, A.B.....	Connecticut
William Whitney Waterman.....	New York City
John Sherreaf Waters, A.B.....	New York City
Oscar Watson, A.B.....	New York City
Sam Parks Watson, A.B.....	South Carolina
Justin Miner Waugh, Jr., Ph.B.....	New York City
Edd Ames Webber.....	New Jersey
Howard Rankin Weirick, B.S.....	New York City
Stephen Whitaker Wells.....	New Jersey
Walter Wettengel.....	New York City
John Sebastian Wever.....	Kansas
David Everett Wheeler, A.B.....	New York City
Lyman Hall Wheeler.....	New York
Richard Kimble Wheeler, A.B.....	New York
Elmer George Wherry, A.B.....	New Jersey
Marion Whitacre, B.Sc.....	Ohio
Harry Draper White.....	New York
Charles Allen Whiting, A.B.....	New York City
James Raynor Whiting, Jr., A.B.....	Connecticut
Henry Mott Whittemore.....	New York City
Ernest Nash Wilcox, A.B.....	New York City
George Wilklow.....	New York
Walter Roland Willets.....	Brooklyn, N. Y.
Adrian Dorsey Williams.....	Brooklyn, N. Y.
Charles Mallory Williams, A.B., Ph.B.....	Brooklyn, N. Y.
Linsly Rudd Williams, A.B.....	New York City
William Edwin Williams.....	Tennessee
Henry Christie Williamson.....	New York City
Edward Temple Willson.....	New York City
Claude Lucas Wilson, A.B.....	Connecticut
William Robert Anthony Wilson, A.B., M.D.....	New York City
Edward Darrah Wisely.....	New York
Abraham Leo Wolbarst.....	New York City
Alfred Charles Wood, A.B.....	New York City
William Cavan Woolsey.....	New Jersey
John Henry Wurthman, Ph.G.....	New York City
Daniel Woodbury Wynkoop.....	New York City

NAME	RESIDENCE
Andrew Benedict Yard.....	New York City
Roy Demas Young, Phar. M., B.S.....	New York
John Louis Zabala, B.S.....	California
Francis Nicoll Zabriskie, A.B.....	New Jersey

## SUMMARY

Students registered in the Medical School.....	700
Seniors in the School of Arts.....	6
Total.....	706

709

1st year — 241  
 2nd " — 161  
 3rd " — 230  
 4th " — 36  
 5th " — 13  
 6th " — 2  
 Old curriculum — 3  
 special students — 23

709

The following degrees were held by members of this class:

A.B. — 165  
 B.S. — 42  
 A.B., A.M., M.D. — 1  
 A.M. — 4  
 Ph.D. — 16  
 Ph.B. — 10  
 M.D. — 12  
 A.B., B.S. — 1  
 Ph.B., LL.B. — 1  
 C.E. — 2  
 A.M., M.D. — 1  
 D.D.S. — 1  
 B.Sc. — 1  
 A.B., Ph.B. — 1

4.B. M.D. }  
 B.S. — 2 } 265 Total.

Seniors from Columbia 6.

## SCHOOL OF MINES

The following departments are represented in the Faculty :

ARCHITECTURE	GEOLOGY
ASTRONOMY	MATHEMATICS
CHEMISTRY	MECHANICS
CIVIL ENGINEERING	MINERALOGY and
ELECTRICAL ENGINEERING	METALLURGY
MECHANICAL ENGINEERING	MINING
PHYSICS	

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### Officers of the Faculty

CHARLES F. CHANDLER, Ph.D., M.D., LL.D.

*Dean and ex-officio Member of the University Council*

HENRY S. MUNROE, E.M., Ph.D. *Elected Delegate to the University Council*

### Standing Committees

COMMITTEE ON ADMISSIONS AND EXAMINATIONS: Professors Chandler, Van Amringe, Munroe

COMMITTEE ON SPECIAL STUDENTS: Professors Chandler, Hutton, Hamlin

### Faculty

SETH LOW, LL.D., *President*

THOMAS EGLESTON, E.M., Ph.D., LL.D., *Professor of Mineralogy and Metallurgy*

CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*

J. HOWARD VAN AMRINGE, Ph.D., L.H.D., *Professor of Mathematics*

OGDEN N. ROOD, A.M., *Professor of Physics*

HENRY S. MUNROE, E.M., Ph.D., *Professor of Mining*

WILLIAM R. WARE, B.S., *Professor of Architecture*

FREDERICK R. HUTTON, C.E., Ph.D., *Professor of Mechanical Engineering*

JOHN K. REES, A.M., E.M., Ph.D., *Professor of Astronomy and Director of the Observatory*

PIERRE DE PEYSTER RICKETTS, E.M., Ph.D., *Professor of Analytical Chemistry and Assaying*

ALFRED D. F. HAMLIN, A.M., *Adjunct Professor of Architecture*  
 \*ALFRED J. MOSES, E.M., Ph.D., *Adjunct Professor of Mineralogy*  
 CHARLES E. COLBY, E.M., C.E., *Adjunct Professor of Organic Chemistry*  
 FRANK DEMPTSER SHERMAN, Ph.B., *Adjunct Professor of Architecture*  
 JAMES F. KEMP, E.M., *Professor of Geology*  
 ROBERT PEELE, JR., E.M., *Adjunct Professor of Mining*  
 FRANCIS B. CROCKER, E.M., Ph.D., *Professor of Electrical Engineering*  
 WILLIAM HALLOCK, A.B., Ph.D., *Adjunct Professor of Physics*  
 WILLIAM H. BURR, C.E., *Professor of Civil Engineering*  
 ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*

NOTE: For details as to other officers of Instruction see departmental statements and special circulars of the different courses in the School of Mines.

## Courses of Instruction

The School of Mines offers seven technical courses leading to professional degrees. These courses consist of required work. In addition, the school offers a graduate course leading to the professional degree of Sanitary Engineer. Besides this professional instruction the school permits certain subjects to be studied in partial fulfilment of the requirements for the degrees of A.B., A.M., and Ph.D. For the sake of clearness, the necessary information as to these different kinds of work is set forth in three parts, numbered respectively I, II, III.

### Part I

#### UNDERGRADUATE COURSES FOR THE PROFESSIONAL DEGREES

1	Mining Engineering	leading to the degree of	E.M.
2	Civil Engineering	" " " " "	C.E.
3	Electrical Engineering	" " " " "	E.E.
4	Metallurgy	" " " " "	Met.E.
5	Geology and Palæontology	" " " " "	B.S.
6	Analytical and Applied Chemistry	" " " " "	B.S.
7	Architecture	" " " " "	B.S.

\* Absent on leave

## COURSE IN MINING ENGINEERING

## First Year

TRIGONOMETRY (Mathematics V\*)—4 hours, first part of first term  
 ALGEBRA (Mathematics V)—4 hours, second part of first term  
 ANALYTICAL GEOMETRY (Mathematics VI)—4 hours, second term  
 PHYSICS (Physics I)—3 hours  
 CHEMISTRY (Chemistry I)—3 hours  
 QUALITATIVE ANALYSIS—(Chemistry IX)—4 hours, and 4 afternoons and Saturdays of alternate weeks laboratory  
 BOTANY (Botany III)—1 hour  
 BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and afternoons of alternate weeks laboratory, first term  
 CRYSTALLOGRAPHY (Mineralogy II)—2 hours, first term  
 MINERALOGY (Mineralogy III)—2 hours, and 3 hours laboratory, second term  
 DRAWING (Mechanical Engineering I)—1 hour and drawing-room, first term  
 DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I)—2 hours, and alternate weeks drawing-room, second term  
 SURVEYING (Civil Engineering I)—2 hours, first term

*Summer Vacation*

SURVEYING (Civil Engineering XV)—6 weeks field work

## Second Year

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics VII)—4 hours  
 PHYSICS (Physics III)—2 hours, first term  
 PHYSICAL LABORATORY (Physics III)—2 hours  
 APPLIED CHEMISTRY (Chemistry XXIX)—3 hours  
 QUANTITATIVE ANALYSIS (Chemistry XVI)—2 hours, and 4 afternoons and Saturdays laboratory, second term  
 MINERALOGY (Mineralogy III)—2 hours, and 3 hours laboratory, first term  
 OPTICAL MINERALOGY (Mineralogy VI)—2 hours, and 2 hours laboratory for 2 months, second term  
 PETROGRAPHY (Geology V)—2 hours, and 1 afternoon for 2 months, second term  
 ZOÖLOGY (Biology I)—1 hour  
 EXCAVATION AND TUNNELLING (Mining I)—3 hours, first term  
 BORING AND SHAFT SINKING (Mining II)—3 hours for 3 months, second term  
 SUPPORT OF MINE EXCAVATIONS (Mining IIA)—3 hours for 1 month, second term  
 DRAWING (Mechanical Engineering I and II)—4 afternoons drawing-room, first term

*Summer Vacation*

SURVEYING (Civil Engineering XVI)—6 weeks, field work  
 PRACTICAL MINING (Mining XI) *optional*—5 weeks  
 FIELD GEOLOGY (Geology X) *optional*—1 week  
 RAILROAD SURVEYING (Civil Engineering XVII) *optional*—4 weeks, field work

\* See pages 35 to 130 for departmental statements



## COURSE IN MINING ENGINEERING

## Third Year

- ANALYTICAL MECHANICS (Mechanics I)—3 hours  
 ASSAYING (Chemistry XXI)—4 hours, and 3 afternoons and Saturdays laboratory, first term  
 GEOLOGY (Geology II)—3 hours  
 RESISTANCE OF MATERIALS (Civil Engineering V)—3 hours, first term ; 2 hours, second term  
 PROPERTIES OF MATERIALS (Mechanical Engineering V)—2 hours, first term ; (Mechanical Engineering VI and XVII)—2 hours, and laboratory, second term  
 ENGINEERING OF POWER PLANTS (Mechanical Engineering XVIII)—1 hour, second term  
 MINING (Mining III)—4 hours, first term  
 ORE DRESSING (Mining IV)—4 hours for 11 weeks, second term  
 MINE CONSTRUCTIONS (Mining VIIA)—4 hours for 3 weeks, second term  
 METALLURGY (Metallurgy I)—4 hours, first term ; (Metallurgy II)—4 hours, second term  
 ELECTRICAL ENGINEERING (Electrical Engineering V)—1 hour, and 1 afternoon laboratory, second term  
 GRAPHIC STATICS (Civil Engineering VI)—2 hours, second term  
 DESIGN, PROBLEMS (Civil Engineering V)—2 afternoons, first term ; (Civil Engineering V and VI)—Afternoon work, second term  
 VACATION CLASS IN MECHANICAL ENGINEERING (Mechanical Engineering XIX) *optional*—second term

*Summer Vacation*

- PRACTICAL MINING (Mining XI)—5 weeks  
 FIELD GEOLOGY (Geology X)—1 week  
 RAILROAD SURVEYING (Civil Engineering XVII)—4 weeks, field work

## Fourth Year

- ECONOMIC GEOLOGY (Geology III)—3 hours  
 THERMODYNAMICS (Mechanics IV)—3 hours, first term  
 MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours, first term  
 MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours, second term  
 DYNAMICS OF ENGINEERING (Mechanical Engineering XII)—1 hour, second term  
 HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory, first term. (Mechanical Engineering VIII)—2 hours, second term  
 MOTORS (Mechanical Engineering XI) 1 hour, first term  
 MACHINERY AND MECHANISM (Mechanical Engineering XIII)—2 hours  
 MINE ENGINEERING (Mining VI)—2 hours, first term ; 1 hour, second term  
 MINE PLANT (Mining VII)—3 hours, first term ; 2 hours, second term  
 MINE SURVEYING (Mining IX)—1 hour, second term  
 MINE ADMINISTRATION (Mining X)—1 hour, second term  
 ORE DRESSING LABORATORY (Mining V)—1 afternoon, first half of second term  
 METALLURGY (Metallurgy III)—4 hours  
 ORE TESTING (Chemistry XXIII)—1 afternoon, last half of second term  
 DESIGN OF MINE PLANT (Mining VIII)—5 afternoons, first term ; 4 afternoons, second term  
 PROJECT AND THESIS in Mining

## COURSE IN CIVIL ENGINEERING

## First Year

- TRIGONOMETRY (Mathematics V\*)—4 hours, first part of first term  
 ALGEBRA (Mathematics V)—4 hours, second part of first term  
 ANALYTICAL GEOMETRY (Mathematics VI)—4 hours, second term  
 PHYSICS (Physics I)—3 hours  
 CHEMISTRY (Chemistry I)—3 hours  
 BOTANY (Botany III)—1 hour  
 DRAWING (Mechanical Engineering I)—1 hour, and drawing-room, first term  
 DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I)—2 hours, and drawing-room, second term  
 SURVEYING (Civil Engineering I)—2 hours, first term

*Summer Vacation*

- SURVEYING (Civil Engineering XV)—6 weeks field work

## Second Year

- ANALYTICAL GEOMETRY AND CALCULUS (Mathematics VII)—4 hours  
 PHYSICS (Physics III)—2 hours, first term  
 PHYSICAL LABORATORY (Physics III)—2 hours  
 APPLIED CHEMISTRY (Chemistry XXIX)—3 hours  
 MINERALS OF BUILDING STONES (Mineralogy IV)—2 hours, and 2 hours laboratory  
 ROAD ENGINEERING (Civil Engineering II)—2 hours, first term  
 WATER SUPPLY AND IRRIGATION (Civil Engineering III)—2 hours, second term  
 EXCAVATION AND TUNNELLING (Mining I)—3 hours, first term  
 GRAPHICS AND DRAWING (Mechanical Engineering I and II)—2<sup>1</sup>/<sub>2</sub> hours, and drawing-room, first term  
 DRAWING (Mechanical Engineering I and II)—2 hours, and drawing-room, second term

*Summer Vacation*

- SURVEYING (Civil Engineering XVI)—6 weeks field work

\* See pages 35 to 130 for departmental statements

## COURSE IN CIVIL ENGINEERING

## Third Year

- ANALYTICAL MECHANICS (Mechanics I)—3 hours  
 GEOLOGY (Geology II)—3 hours  
 GEODESY (Astronomy III)—2 hours  
 RESISTANCE OF MATERIALS (Civil Engineering V)—3 hours, first term ; 2 hours, second term  
 PROPERTIES OF MATERIALS (Mechanical Engineering V and XVII)—2 hours, first term ; (Mechanical Engineering VI and XVII)—2 hours, and laboratory, second term  
 ENGINEERING OF POWER PLANTS (Mechanical Engineering XVIII)—1 hour, second term  
 MASONRY STRUCTURES (Civil Engineering IV)—1 hour  
 THEORY OF TRUSSES (Civil Engineering VII)—2 hours, second term  
 SEWAGE DISPOSAL (Civil Engineering VIII)—2 hours, first term  
 GRAPHIC STATICS (Civil Engineering VI)—2 hours, second term  
 THEORY OF RAILROAD SURVEYING (Civil Engineering XIV)—1 hour  
 ELECTRICAL ENGINEERING (Electrical Engineering V)—1 hour, and 1 afternoon laboratory, second term  
 DESIGN, PROBLEMS (Civil Engineering IV and V)—Afternoon work, first term (Civil Engineering IV, V, VI, and VII)—Afternoon work, second term  
 VACATION CLASS IN MECHANICAL ENGINEERING (Mechanical Engineering XIX) *optional*—second term

*Summer Vacation*

- PRACTICAL GEODESY (Astronomy III)—6 weeks  
 RAILROAD SURVEYING (Civil Engineering XVII)—4 weeks field work

## Fourth Year

- GEODESY (Astronomy III)—2 hours, first term  
 DESIGN OF BRIDGES AND BUILDINGS (Civil Engineering X)—2 hours  
 HYDRAULICS (Civil Engineering XII) 2 hours, first term  
 THERMODYNAMICS (Mechanics IV)—3 hours, first term  
 MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours, first term  
 MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours, second term  
 HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory, first term ; (Mechanical Engineering VIII)—2 hours, second term  
 MOTORS (Mechanical Engineering XI)—1 hour, first term  
 MACHINERY AND MECHANISM (Mechanical Engineering XIII)—2 hours  
 PUMPS AND PUMPING ENGINES (Mechanical Engineering XIV)—course of 6 lectures, first term  
 DYNAMICS OF ENGINEERING (Mechanical Engineering XII)—1 hour, second term  
 FOUNDATIONS (Civil Engineering XI)—2 hours  
 SEWERS AND HARBORS (Civil Engineering XIII)—2 hours, second term  
 RAILROAD ENGINEERING (Mechanical Engineering XV)—3 hours, first half of first term ; (Civil Engineering IX)—3 hours, second half of first term ; 3 hours, second term  
 DESIGN, PROBLEMS (Civil Engineering X, XI, and XII)—Afternoon work, first term ; (Civil Engineering X, XI, and XIII)—Afternoon work, second term  
 PROJECT OR THESIS

## COURSE IN ELECTRICAL ENGINEERING

## First Year

TRIGONOMETRY (Mathematics V\*)—4 hours, first part of first term

ALGEBRA (Mathematics V)—4 hours, second part of first term

ANALYTICAL GEOMETRY (Mathematics VI)—4 hours, second term

PHYSICS (Physics I)—3 hours

CHEMISTRY (Chemistry I)—3 hours

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 4 afternoons and Saturdays of alternate weeks laboratory

DRAWING (Mechanical Engineering I)—1 hour, and afternoons of alternate weeks drawing-room, first term

DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I)—2 hours, and afternoons of alternate weeks drawing-room, second term

*Summer Vacation*

SUMMER WORK, a set of drawings on subjects to be assigned by the Instructor in Drawing

## Second Year

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics VII)—4 hours

PHYSICS (Physics III)—2 hours

PHYSICAL LABORATORY (Physics III)—8 hours

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours

QUANTITATIVE ANALYSIS (Chemistry XVI)—1 hour, and 3 hours laboratory, second term

ELEMENTS OF ELECTRICAL ENGINEERING (Electrical Engineering VII)—3 hours, second term

GRAPHICS and DRAWING (Mechanical Engineering I and II)—2 hours, and 3 afternoons drawing-room, first term

DRAWING (Mechanical Engineering I and II)—2 hours, and 3 afternoons drawing-room, second term

*Summer Vacation*

## MEMOIR

\* See pages 35 to 130 for departmental statements

## COURSE IN ELECTRICAL ENGINEERING

## Third Year

- ANALYTICAL MECHANICS (Mechanics I)—3 hours  
 RESISTANCE OF MATERIALS (Civil Engineering V)—3 hours, and 2 afternoons, first term ; 2 hours, and 2 afternoons, second term  
 PROPERTIES OF MATERIALS (Mechanical Engineering V and XVII)—2 hours, first term ; (Mechanical Engineering VI and XVII)—2 hours, and laboratory, second term  
 ENGINEERING OF POWER PLANTS (Mechanical Engineering XVIII)—1 hour, second term  
 DYNAMO AND MOTOR PRACTICE (Electrical Engineering I)—3 hours, first term  
 ELECTRICAL ENGINEERING (Electrical Engineering VI)—1 hour  
 ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering X)—2 afternoons  
 ELECTRIC LIGHTING (Electrical Engineering IV)—3 hours, second term  
 THEORY OF DYNAMO AND MOTOR (Mechanics VI)—3 hours, first term ; (Mechanics VII)—3 hours, second term  
 ELECTRICAL MEASUREMENTS (Mechanics IXA)—2 hours  
 DRAWING (Mechanical Engineering III)—1 afternoon  
 VACATION CLASS IN MECHANICAL ENGINEERING (Mechanical Engineering XIX) *optional*—second term

*Summer Vacation*

## MEMOIR

## Fourth Year

- THERMODYNAMICS (Mechanics IV)—3 hours, first term  
 MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours, first term  
 MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours, second term  
 HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory, first term ; (Mechanical Engineering VIII)—2 hours, second term  
 MOTORS (Mechanical Engineering XI)—1 hour, first term  
 DYNAMICS OF ENGINEERING (Mechanical Engineering XII)—1 hour, second term  
 MACHINERY AND MECHANISM (Mechanical Engineering XIII)—2 hours  
 ELECTRICAL ENGINEERING (Electrical Engineering III)—1 hour, first term ; 3 hours, second term  
 ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering XI and XII)—3 afternoons, first term ; (work in connection with graduation thesis), second term  
 ELECTRIC POWER (Electrical Engineering II)—3 hours, first term  
 THEORY OF ALTERNATORS AND TRANSFORMERS (Mechanics VIII)—3 hours, first term  
 ELECTRIC RAILWAY (Electrical Engineering VIII)—2 hours, second term  
 THEORY OF VARIABLE CURRENTS (Mechanics IX)—2 hours, second term  
 ADVANCED THEORY OF ELECTRICITY (Mechanics XIV, XV, or XVII), *optional*—second term  
 DRAWING, PROBLEMS, AND DESIGN (in connection with Electrical Engineering II and III), first term ; (in connection with Electrical Engineering II, III, and VIII), second term  
 THESIS



## COURSE IN METALLURGY

## First Year

TRIGONOMETRY (Mathematics V\*)—4 hours, first part of first term

ALGEBRA (Mathematics V)—4 hours, second part of first term

ANALYTICAL GEOMETRY (Mathematics VI)—4 hours, second term

PHYSICS (Physics I)—3 hours

CHEMISTRY (Chemistry I)—3 hours

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 4 afternoons and Saturdays of alternate weeks laboratory

BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and afternoons of alternate weeks laboratory, first term

CRYSTALLOGRAPHY (Mineralogy II)—2 hours, first term

MINERALOGY (Mineralogy III)—2 hours, and 3 hours laboratory, second term

DRAWING (Mechanical Engineering I)—1 hour, and drawing-room, first term

DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I) 2 hours, and alternate weeks drawing-room, second term

SURVEYING (Civil Engineering I)—2 hours, first term

*Summer Vacation*

SURVEYING (Civil Engineering XV)—6 weeks field work

## Second Year

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics VII)—4 hours

PHYSICS (Physics III)—2 hours, first term

PHYSICAL LABORATORY (Physics III)—2 hours

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours

QUANTITATIVE ANALYSIS (Chemistry XIV)—2 hours, and 4 afternoons and Saturdays laboratory

OPTICAL MINERALOGY (Mineralogy VI)—2 hours, and 2 hours laboratory for 2 months, second term

PETROGRAPHY (Geology V)—2 hours, and 1 afternoon for 2 months, second term

MINERALOGY (Mineralogy III)—2 hours, and 3 hours laboratory, first term

EXCAVATION AND TUNNELLING (Mining I)—3 hours, first term

BORING AND SHAFT SINKING (Mining II)—3 hours for 3 months, second term

SUPPORT OF MINE EXCAVATIONS (Mining IIA)—3 hours for 1 month, second term

GRAPHICS AND DRAWING (Mechanical Engineering I)—2 hours, and drawing-room, first term

DRAWING (Mechanical Engineering I)—2 hours, and drawing-room, second term

*Summer Vacation*

PRACTICAL MINING (Mining XI) *optional*—5 weeks

FIELD GEOLOGY (Geology X) *optional*—1 week

SURVEYING (Civil Engineering XVI)—6 weeks field work

\* See pages 35 to 130 for departmental statements

## COURSE IN METALLURGY

## Third Year

- ANALYTICAL MECHANICS (Mechanics I)—3 hours  
 QUANTITATIVE ANALYSIS (Chemistry XIV)—2 hours, and 4 afternoons and Saturdays laboratory, second term  
 ASSAYING (Chemistry XXI)—4 hours, and 3 afternoons and Saturdays laboratory, first term  
 GEOLOGY (Geology II)—3 hours  
 RESISTANCE OF MATERIALS (Civil Engineering V)—3 hours, first term ; 2 hours, second term  
 ENGINEERING OF POWER PLANTS (Mechanical Engineering XVIII)—1 hour, second term  
 MINING (Mining III)—4 hours, first term  
 ORE DRESSING (Mining IV)—4 hours for 11 weeks, second term  
 MINE CONSTRUCTIONS (Mining VIIA)—4 hours for 3 weeks, second term  
 ELECTRICAL ENGINEERING (Electrical Engineering V)—1 hour, and 1 afternoon laboratory, second term  
 METALLURGY (Metallurgy I)—4 hours, first term ; (Metallurgy II)—5 hours, second term  
 GRAPHIC STATICS (Civil Engineering VI)—2 hours, second term  
 DESIGNS, PROBLEMS (Civil Engineering V)—Afternoon work, first term ; (Civil Engineering V, VI, and VII)—Afternoon work, second term  
 VACATION CLASS IN MECHANICAL ENGINEERING (Mechanical Engineering XIX) *optional*—second term

*Summer Vacation*

- PRACTICAL MINING (Mining XI)—5 weeks  
 FIELD GEOLOGY (Geology X)—1 week

## Fourth Year

- ECONOMIC GEOLOGY (Geology III)—3 hours  
 THERMODYNAMICS (Mechanics IV)—3 hours, first term  
 MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours, first term  
 MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours, second term  
 DYNAMICS OF ENGINEERING (Mechanical Engineering XII)—1 hour, second term  
 HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory, first term (Mechanical Engineering VIII)—2 hours, second term  
 MOTORS (Mechanical Engineering XI)—1 hour, first term  
 MACHINERY AND MECHANISM (Mechanical Engineering XIII)—2 hours  
 MINE ENGINEERING (Mining VI)—2 hours, first term ; 1 hour, second term  
 MINE PLANT (Mining VII)—3 hours, first term ; 2 hours, second term  
 MINE SURVEYING (Mining IX)—1 hour, second term  
 MINE ADMINISTRATION (Mining X)—1 hour, second term  
 ORE DRESSING LABORATORY (Mining V)—1 afternoon, first half of second term  
 METALLURGY (Metallurgy III)—5 hours  
 ORE TESTING (Chemistry XXIII)—1 afternoon, last half of second term  
 DRAWING (in connection with Project)  
 PROJECT

## COURSE IN GEOLOGY AND PALÆONTOLOGY

## First Year

- TRIGONOMETRY (Mathematics V\*)—4 hours, first part of first term  
 ALGEBRA (Mathematics V)—4 hours, second part of first term  
 ANALYTICAL GEOMETRY (Mathematics VI)—4 hours, second term  
 PHYSICS (Physics I)—3 hours  
 CHEMISTRY (Chemistry I)—3 hours  
 QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 4 afternoons and Saturdays of alternate weeks laboratory  
 BOTANY (Botany III)—1 hour  
 BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and afternoons of alternate weeks laboratory, first term  
 CRYSTALLOGRAPHY (Mineralogy II)—2 hours, first term  
 MINERALOGY (Mineralogy III)—2 hours, and 3 hours laboratory, second term  
 DRAWING (Mechanical Engineering I)—1 hour, and drawing-room, first term  
 DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I)—2 hours, and alternate weeks drawing-room, second term  
 SURVEYING (Civil Engineering I)—2 hours, first term

*Summer Vacation*

- SURVEYING (Civil Engineering XV)—6 weeks field work

## Second Year

- PHYSICS (Physics III)—2 hours, first term  
 PHYSICAL LABORATORY (Physics III)—2 hours  
 APPLIED CHEMISTRY (Chemistry XXIX)—3 hours  
 ZOÖLOGY (Biology I)—1 hour  
 BOTANY (Botany IV)—4 hours laboratory  
 MINERALOGY (Mineralogy III)—2 hours, and 3 hours laboratory, first term  
 OPTICAL MINERALOGY (Mineralogy VI)—2 hours, and 2 hours laboratory for 2 months, second term  
 PETROGRAPHY (Geology V)—2 hours, and 1 afternoon for 2 months, second term  
 EXCAVATION AND TUNNELLING (Mining I)—3 hours, first term  
 BORING AND SHAFT SINKING (Mining II)—3 hours for three months, second term  
 SUPPORT OF MINE EXCAVATIONS (Mining IIA)—3 hours for 1 month, second term  
 MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each  
 PENCIL AND BRUSH DRAWING, FOSSILS

*Summer Vacation*

- PRACTICAL MINING (Mining XI) *optional*—5 weeks  
 FIELD GEOLOGY (Geology X) *optional*—1 week  
 SURVEYING (Civil Engineering XVI)—6 weeks field work

\* See pages 35 to 130 for departmental statements

## COURSE IN GEOLOGY AND PALÆONTOLOGY

## Third Year

ASSAYING (Chemistry XXI)—4 hours, and 3 afternoons and Saturdays laboratory, first term

GEOLOGY (Geology II)—3 hours

PALÆOBOTANY (Geology VIII)—1 hour, and 4 hours laboratory

BOTANY (Botany V)—4 hours laboratory

ZOÖLOGY (Biology IA)—1 hour

OPTICAL MINERALOGY AND CRYSTALLOGRAPHY (Mineralogy VII and VIII)—3 hours and 1 afternoon

MINING (Mining III)—4 hours, first term

ORE DRESSING (Mining IV)—4 hours for 11 weeks, second term

METALLURGY (Metallurgy I)—4 hours, first term ; (Metallurgy II)—4 hours, second term

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each

DRAWING (Geological maps, sections, and specimens)

*Summer Vacation*

PRACTICAL MINING (Mining XI) *optional*—5 weeks

FIELD GEOLOGY (Geology X) *optional*—1 week

MEMOIR

## Fourth Year

QUANTITATIVE ANALYSIS (Chemistry XV)—2 hours, and 4 afternoons and Saturdays laboratory

PALÆONTOLOGY (Geology VII)—2 hours, and 4 hours laboratory

BOTANY (Botany VI)—1 hour

ZOÖLOGY (Biology IB)—1 hour

PETROGRAPHY (Geology VI)—2 hours, and 4 hours laboratory

ECONOMIC GEOLOGY (Geology III)—3 hours

METALLURGY (Metallurgy III)—4 hours

DRAWING (in connection with Memoir and Thesis)

THESIS

## COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

## First Year

- TRIGONOMETRY (Mathematics V\*)—4 hours, first part of first term  
 ALGEBRA (Mathematics V)—4 hours, second part of first term  
 ANALYTICAL GEOMETRY (Mathematics VI)—4 hours, second term  
 PHYSICS (Physics I)—3 hours  
 CHEMISTRY (Chemistry I)—3 hours  
 CHEMICAL PHYSICS (Chemistry III)—2 hours, first term  
 STOICHIOMETRY (Chemistry IV)—2 hours, second term  
 QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 4 afternoons and Saturdays of alternate weeks laboratory  
 BOTANY (Botany III)—1 hour  
 BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and afternoons of alternate weeks laboratory, first term  
 CRYSTALLOGRAPHY (Mineralogy II)—2 hours, first term  
 MINERALOGY (Mineralogy III)—2 hours, and 3 hours laboratory, second term  
 DRAWING (Mechanical Engineering I)—1 hour, and drawing-room practice

*Summer Vacation*

SUMMER WORK, a set of drawings on subjects to be assigned by the Instructor in Drawing

## Second Year

- PHYSICS (Physics III)—2 hours, first term  
 PHYSICAL LABORATORY (Physics III)—2 hours  
 APPLIED CHEMISTRY (Chemistry XXIX)—3 hours  
 CHEMICAL PHILOSOPHY (Chemistry V)—2 hours  
 QUANTITATIVE ANALYSIS (Chemistry XIII)—4 hours, and 4 afternoons and Saturdays laboratory  
 ZOOLOGY (Biology I)—1 hour  
 MINERALOGY (Mineralogy III)—2 hours, and 3 hours laboratory, first term  
 MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each

*Summer Vacation*

MEMOIR

\* See pages 35 to 130 for departmental statements



## COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

## Third Year

APPLIED CHEMISTRY (Chemistry XXX)—3 hours

QUANTITATIVE ANALYSIS (Chemistry XIII)—4 hours, and 4 afternoons and Saturdays laboratory, second term

PREPARATION OF INORGANIC COMPOUNDS (Chemistry VII)—1 hour and 5 afternoons last half of second term

ASSAYING (Chemistry XXI)—4 hours, and 3 afternoons and Saturdays laboratory, first term

GEOLOGY (Geology II)—3 hours

METALLURGY (Metallurgy I)—4 hours, first term. (Metallurgy II)—4 hours, second term

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each

DRAWING (Mechanical Engineering II)—1 afternoon drawing-room, second term

*Summer Vacation*

MEMOIR

## Fourth Year

APPLIED CHEMISTRY (Chemistry XXX)—4 hours

ORGANIC CHEMISTRY (Chemistry XXV)—6 hours, and at least 18 hours laboratory

ECONOMIC GEOLOGY (Geology III)—3 hours

METALLURGY (Metallurgy III)—4 hours

THESIS

## COURSE IN ARCHITECTURE

## First Year

ARCHITECTURAL ENGINEERING (Architecture XIV\*)—2 hours  
 ELEMENTS OF ARCHITECTURE (Architecture VIII)—2 hours, second term  
 ANCIENT ARCHITECTURAL HISTORY (Architecture I)—3 hours  
 HISTORY OF ANCIENT ORNAMENT (Architecture V)—1 hour  
 SPECIFICATIONS (Architecture XIII)—1 hour  
 PROJECTIONS, SHADES AND SHADOWS (Architecture X)—2 hours, first term  
 DESIGN, PROBLEMS (Architecture XV)—15 hours  
 DRAWING, ARCHITECTURAL AND FREEHAND (Architecture IXA and c)—  
 15 hours  
 HISTORICAL DRAWING (Architecture IXB)—1 hour  
 ARCHITECTURAL ESSAYS (Architecture XVII)—1 hour  
 SURVEYING (Civil Engineering I) *optional*—2 hours, first term

*Summer Vacation*

SURVEYING (Civil Engineering XV) *optional*—6 weeks field work  
 MEMOIR

## Second Year

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours  
 PERSPECTIVE (Architecture XI)—8 lectures, December and January  
 ARCHITECTURAL ENGINEERING (Architecture XIV)—3 hours  
 MODERN ARCHITECTURAL HISTORY (Architecture III)—2 hours, first term ;  
 2 hours and 12 hours research, second term  
 ARCHÆOLOGY, FRENCH (Architecture XVI)—2 hours  
 HISTORY OF MODERN ORNAMENT (Architecture VII)—1 hour  
 THEORY OF FORM (Architecture IV)—1 hour, first term  
 COMPOSITION (Architecture IV)—1 hour, second term  
 SPECIFICATIONS (Architecture XIII)—1 hour  
 DESIGN, PROBLEMS (Architecture XV)—15 hours, first term  
 HISTORICAL DESIGN (Architecture III and XV)—3 hours, second term  
 ARCHITECTURAL ESSAYS (Architecture XVII)—1 hour  
 DRAWING, FREEHAND (Architecture IXC)—2 hours, first term

*Summer Vacation*

SURVEYING (Civil Engineering XVI) *optional*—6 weeks field work  
 MEMOIR

\* See pages 35 to 130 for departmental statements

## COURSE IN ARCHITECTURE

## Third Year

GEOLOGY (Geology IV)—2 hours, with 10 introductory lectures on common minerals (Mineralogy V), first term

ECONOMIC GEOLOGY OF BUILDING-STONES (Geology III)—3 hours for one month, second term

ARCHITECTURAL ENGINEERING (Architecture XIV)—4 hours

MODERN ARCHITECTURAL HISTORY (Architecture III)—2 hours, first term ; 2 hours and 12 hours research, second term

ARCHÆOLOGY [German] (Architecture XVI)—2 hours

HISTORY OF MODERN ORNAMENT (Architecture VII)—1 hour

THEORY OF FORM (Architecture IV)—1 hour, first term

COMPOSITION (Architecture IV)—1 hour, second term

SPECIFICATIONS (Architecture XIII)—1 hour

DESIGN, PROBLEMS (Architecture XV)—15 hours, first term

HISTORICAL DESIGN (Architecture III and XV)—3 hours, second term

ARCHITECTURAL ESSAYS (Architecture XVII)—1 hour

DRAWING, FREEHAND (Architecture IXc)—2 hours

*Summer Vacation*

## MEMOIR

## Fourth Year

ADVANCED ARCHITECTURAL HISTORY (Architecture XVIII)—2 hours

ADVANCED ARCHITECTURAL DESIGN (Architecture XIX)—20 hours

ADVANCED ARCHITECTURAL ENGINEERING AND PRACTICE (Architecture XX and XXI)—5 hours, and 15 hours practice

DESCRIPTIVE GEOMETRY (Architecture XII)—1 hour, first term

STEREOTOMY (Architecture XII)—1 hour, second term

DRAWING, FIGURE, ORNAMENT, AND WATER-COLORS (Architecture IXc)—2 hours

THESIS

## By-Laws

1 At the beginning of the first year each student must elect which of the seven courses he intends to pursue, and must thenceforth abide by his election unless permitted by the Faculty to make a change.

2 No student is allowed to pursue more than one course at a time.

## Admission

3 Candidates for admission to the first class, at its formation, must be of the age of *eighteen years*, complete; and for admission to advanced standing there will be required a corresponding increase of age; but this rule may be dispensed with when, in the opinion of the Faculty, there are sufficient reasons to justify its relaxation.

## Enrolment and Certificates

4 An applicant for admission must file with the Dean of the School of Mines, at least one week before the day fixed for the entrance examinations, a certificate from his principal instructor containing a definite statement of the subjects which he is qualified to offer for examination. No student will be examined in June, 1896, whose name is not enrolled and whose certificate is not filed on or before Wednesday, June 3d, of the same year; nor will any student be examined in September, 1896, whose name is not enrolled and whose certificate is not filed on or before Monday, September 21st. Blank forms of the certificate required can be had upon application to the Registrar of the School of Mines. In the case of students expecting to be examined at a distance from the College, the names must be enrolled and the certificates filed one week earlier.

5 Every candidate must, before admission, present a certificate of good moral character from his last teacher, or from some citizen in good standing, and students from other colleges must bring certificates from those colleges of honorable dismissal.

## Entrance Examinations

6 Candidates for the first class must pass satisfactory examinations in:

### *Mathematics:*

Arithmetic, including the metric system of weights and measures.

Algebra, on the fundamental operations, greatest common divisor and least common multiple, fractions, equations of the first degree, formation of powers, extraction of roots, radicals, equations of the second degree, ratio, proportion, and series.

Geometry, plane, solid, and spherical geometry.

Plane trigonometry, on the use of tables of logarithms of numbers and of logarithms of trigonometric functions, solution of right-angled and of oblique-angled plane triangles.

*Physics :*

On the equivalent of Ganot's smaller treatise (Peck's Ganot's Natural Philosophy).

*Chemistry :*

On the non-metallic elements and their important compounds with each other, as given in the ordinary high-school text-books.

*English—requirements for 1896 :*

Grammar (Whitney's Essentials of English Grammar indicates the field to be covered).

Composition—The candidate will be required to write an essay of at least two hundred and fifty words, based upon some subject taken from one of the four works in English literature prescribed for the year. The essay must be written during the examination, and will be judged with reference to spelling, punctuation, grammar, division by paragraphs, and expression.

For 1896, the works prescribed are :

Shakspere's Merchant of Venice, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, Macaulay's Essay on Milton, and Webster's first Bunker Hill Oration.

In 1897 and succeeding years candidates will be examined in accordance with the requirements stated as follows. In both the spring and the autumn examinations of 1896 a candidate may choose whether he will be examined in accordance with the requirements now in force (as stated *above*) or in accordance with the new requirements.

*English—requirements for 1897 :*

No applicant will be accepted in English whose work is notably defective in point of spelling, grammar, idiom, punctuation, or division into paragraphs.

I. READING AND COMPOSITION.—The candidate will be required to present evidence of a general knowledge of the subject matter of the prescribed books, and to answer simple questions on the lives of their authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to show the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In the place of a part or whole of this test, the candidate may present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The candidate is expected to read intelligently all the books prescribed. He should read them as he reads other books ; he is not expected to know them minutely, but to have freshly in mind their most important parts.

The books set for this part of the examination will be :

1896 : Shakspere's A Midsummer Night's Dream ; Defoe's History of the Plague in London ; Irving's Tales of a Traveller ; Scott's Woodstock ; Macaulay's Essay on Milton ; Longfellow's Evangeline ; George Eliot's Silas Marner.



1897 : Shakspeare's *As You Like It* ; Defoe's *History of the Plague in London* ; Irving's *Tales of a Traveller* ; Hawthorne's *Twice Told Tales* ; Longfellow's *Evangeline* ; George Eliot's *Silas Marner*.

1898 : Milton's *Paradise Lost*, Books I and II ; Pope's *Iliad*, Books I and XXII ; The Sir Roger de Coverley Papers in *The Spectator* ; Goldsmith's *The Vicar of Wakefield* ; Coleridge's *Ancient Mariner* ; Southey's *Life of Nelson* ; Carlyle's *Essay on Burns* ; Lowell's *Vision of Sir Launfal* ; Hawthorne's *The House of the Seven Gables*.

2. STUDY AND COMPOSITION.—This part of the examination presupposes the thorough study of each of the works named below. The examination will be upon subject matter, literary form, and grammatical and logical structure.

In connection with the reading and study of the required books, parallel or subsidiary reading should be encouraged, and a considerable amount of English poetry should be committed to memory. The essentials of English grammar should not be neglected in preparatory study.

The books prescribed are for the present to be those selected and recommended by the Association of Colleges and Preparatory Schools in the Middle States and Maryland, and similar bodies, acting jointly.

The books set for this part of the examination will be :

1896 : Shakspeare's *The Merchant of Venice* ; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas* ; Webster's first *Bunker Hill Oration*.

1897 : Shakspeare's *The Merchant of Venice* ; Burke's *Speech on Conciliation with America* ; Scott's *Marmion* ; Macaulay's *Life of Samuel Johnson*.

1898 : Shakspeare's *Macbeth* ; Burke's *Speech on Conciliation with America* ; De Quincey's *The Flight of a Tartar Tribe* ; Tennyson's *The Princess*.

#### *French :*

The elements of French grammar.

The ability to read easy French, such as Rambaud's *Petite Histoire de la Civilisation Française*.

The admission examination in French is divided into two parts designed to test, respectively, (1st) the ability of the applicant to read at sight French prose of ordinary difficulty, (2d) his knowledge of elementary grammar.

The ability to read ordinary French prose will be acquired, it is believed, by the reading, in addition to the study of Grammar, of three hundred or more 12mo pages of French. It is recommended that the reading be divided between historical narrative and popular works on science, including the names of most of the articles in daily use ; a few very simple descriptive passages may also be included. Although no work is prescribed, the attention of teachers in preparatory schools is called to Alfred Rambaud's *Petite Histoire de la Civilisation Française* (Paris, A. Colin) and Louis Figuier's *Les Grandes Inventions* (Paris, Hachette).

By knowledge of elementary grammar is meant knowledge of the paradigms, including the four conjugations of regular verbs, as well as the most frequently used irregular verbs and those belonging to the same classes as *sentir*, *paraître*, *craindre*, etc. ; knowledge of elementary syntax, including the place of personal

pronouns when used as direct or indirect objects. This knowledge may be tested as well by translation in French of very simple English sentences as by direct questioning.

The following grammatical nomenclature will be adhered to on the examination papers:—Article : definite, indefinite, and partitive. Noun : common, proper. Adjective : qualifying and determinative, the latter including demonstrative, possessive, numeral, indefinite, and interrogative. Pronoun : personal, demonstrative, possessive, indefinite, relative, and interrogative. Verbs : auxiliary, regular, irregular, and impersonal ; active and passive ; transitive and intransitive. Adverbs of quantity, time, place, and manner. Prepositions. Conjunctions. Interjections. For the moods and tenses of verbs the following will be adhered to : Indicative : simple tenses—present, imperfect, future, past definite or preterite ; compound tenses—past indefinite, pluperfect, future anterior, past anterior. Subjunctive : simple tenses—present, imperfect ; compound tenses—past, pluperfect. Conditional : present, past. Imperative : present, past. Infinitive : present, past. Participle : present, past.

The preparation for the examination, if spread over two years, ought to occupy no less than three weekly recitations of one hour each ; good results might be obtained in one year with daily recitations of forty-five minutes each.

The teachers in preparatory schools will greatly help the work of the College if they will bear in mind that definitive knowledge is what is required, and not merely acquaintance with the forms of the language. A firm grasp of the most important rules and most constant forms will be found much more useful than the knowledge of some curious exception. Pronunciation, although it cannot be tested at the entrance examination, which is wholly in writing, must not be neglected. Applicants ought to be able to read aloud intelligibly what they are expected to be able to translate.

The use of good English is expected on the part of the candidates on their examination books, whether in answers to direct questions or in translations from French to English.

Only candidates coming for their *full* or *final* entrance examination can present French. It cannot be presented in the *preliminary* examination.

The object of the admission requirement in French is to secure for the students in the School of Mines ability to use readily French authorities on the subjects taught in the school. Scientific works in French will have to be read wholly or in part by every student from the first year on.

#### *German :*

The elements of German Grammar.

The ability to read easy German, such as Andersen's or Grimm's Märchen.

The object of the entrance examination in German is to determine whether the candidate has a sufficient knowledge of grammar, vocabulary, and idiom, to read easy German prose at sight. Hauff's and Grimm's Märchen are suggested merely to indicate the grade of work ; any easy stories or plays can be used in preparation with equally good results.

An adequate preparation for this examination ought to extend over two years, with three recitations a week, at the ordinary pace of school work.

Instruction in grammar should be thorough with regard to the ordinary paradigms and everyday constructions; and the ordinary connective words—auxiliaries, prepositions, conjunctions, etc.—should be learned early and thoroughly. But grammar drill should, after the first introductory lesson, follow rather than precede abundant practice in reading. Pupils should prepare lessons of suitable length from the text, and be held to strict account, not only for the vocabulary, but also for the grammatical points in the lesson. At least 100 pages should be covered in this careful way in the course of preparation. Besides this kind of work, the pupils should have daily practice in translation at sight, and should read in that way not less than 200 pages.

It is recommended that the required preparation of German as set forth above should be supplemented by the reading of Gore's German Science Reader.

#### *History :*

On the equivalent of Johnston's History of the United States.

#### *Free-hand Drawing :*

Including the ability to sketch, both in outline and with proper shading, ordinary objects, such as a house, a simple piece of machinery, a piece of flat ornament from a copy, a group of geometrical solids. Each applicant must execute the required drawings in the presence of the examining officer. No certificate of drawings made elsewhere are accepted.

7 Entrance examinations will be held at the College, and for the convenience of candidates for admission residing at a distance from New York, at other principal cities, on Wednesday, June 10, 1896, and days following, and on Monday, September 28, 1896, and days following, and, by permission of the Faculty on suitable application, at any time during the session.

8 The applicant may present himself in a portion of the subjects, in June and complete his examination in September of the same year. But no examination for admission will be allowed to stand to the credit of an applicant for a period longer than sixteen months.

### Preliminary Examinations

9 An applicant duly enrolled, who has filed the required certificate from his principal teacher, may, at the appointed examination time in May or June, of the year preceding his admission into the first class, but not at any other time, be examined on certain portions of the foregoing subjects. Such an applicant may offer at the preliminary examination all subjects required for admission *except*

In algebra, equations of the second degree and beyond.

In geometry, solid and spherical geometry.

Trigonometry.

French.

German.

English Composition.

### Diplomas and Certificates in Lieu of Examination

10 Diplomas and certificates of other colleges and schools of science will be accepted in lieu of examination, *if satisfactory to the examining officers*. Each examining officer decides the question for his special department. No certificates in lieu of examinations will be accepted, except those of degree-granting institutions, including the Regents of the University of the State of New York.

### Admission and Conditions

11 The Committee of the Faculty on Admissions and Examinations will decide, and report to the Dean, within twelve days after the conclusion of the examination, which candidates have been admitted, which have been admitted conditionally, and which have been rejected.

12 Students deficient in minor studies may be admitted conditionally ; each case being considered on its merits by the Committee on Admissions and Examinations. Students admitted conditionally at the beginning of the academic year must satisfy all conditions within a year or at such time as may be determined by the Committee on Admissions and Examinations. Students who fail to satisfy their entrance conditions within the time specified will be dropped from the roll.

13 The Committee of the Faculty on Admissions and Examinations have jurisdiction over all questions arising under the rules relating to entrance examinations.

### Advanced Standing

14 Candidates for advanced standing must pass a satisfactory examination upon the studies named above, and also upon those pursued by the class up to the time at which they propose to enter.

15 No candidates are admitted later in the course than the beginning of the fourth year.

### Attendance

16 Prompt attendance is required upon all the exercises of the school. Each instance of tardiness will be counted as half an absence.

17 Attendance during all the hours specified on the scheme of attendance adopted by the faculty is obligatory.

18 Any student who shall have been absent from more than ten per cent. of the exercises in any subject, shall not be entitled to examination in that subject.

19 Every student is expected and required to keep an account of his absences, and should he exceed the limit allowed in any course, he must present to the Dean, during the week preceding the stated examination, satisfactory explanation of all his absences, or be debarred from the examination.

20 Any student who, being present at the school, shall absent himself from any exercise, or shall leave the grounds during the hours at which his attendance is due, shall be liable to removal from the roll of his class.

21 Students are required to attend all the exercises and pass all the examinations of the class and course to which they belong unless specially excused by vote of the Faculty.

22 By special permission of the Faculty, students may attend exercises not required in the class or course to which they belong, provided that such attendance does not interfere with the required exercises of their class and course. Such students are held to the same rules of attendance and examination in the extra studies as in the required studies of their class and course.

23 Students who obtain on examination in advance a mark of *eight* or more in any subject may be excused from attendance upon the exercises in that subject. This rule does not apply to students who repeat the studies of any year under by-law 27. Reports of such standing must be filed with the Dean of the Faculty, who alone is authorized to excuse students from attendance.

24 Any student who shall have passed a satisfactory examination in the School of Arts of Columbia College in any study forming a part of the regular course in the School of Mines, will not be required to pursue that study in the school.

### Examinations

25 Examinations will be held at the end of the first term (semi-annual, or at the end of the year (annual), on all subjects taught in the school.

26 Any student found guilty of fraudulent practices at examination will be summarily dismissed from the school.

27 Any student who shall fail to pass in any of his studies at the regular semi-annual or annual examination, may present himself for a second examination at the end of the summer vacation ; failing to pass in this second examination, his name will be dropped from the roll of his class, and he will not be permitted to attend any of the exercises of said class, except by special permission first obtained from the President ; but he may enter the succeeding class and pursue all of its exercises and present himself with that class for examination in all subjects ; upon failing a third time in any study, his name will be dropped from the roll of the school.

28 Absence from the regular semi-annual or annual examination, unless excused by the Faculty, will be counted a failure to pass that examination. This rule shall apply to examinations for delinquents held at the end of the summer vacation.

29 Unless for reasons of weight special examinations will not be granted to students who fail at the regular examinations ; but they may present themselves at the time of the next regular examinations.

30 Examinations at times other than here designated are not held except by order of the Faculty.

31 Deficient students of the first, second, or third years will not be allowed to attend any summer school without special permission of the Faculty.

32 No student is entitled to a degree until he has passed satisfactory examinations in all the studies of the course in which he desires to graduate.



33 When a student fails to receive his degree with his class, and returns at some later period to present himself for examination for the same, he will be required to comply with all the requirements at the later date, and the same rule shall apply to students who have received one degree and make application for another.

### Standing

34 Every officer keeps a record of the scholarship of each student.

35 The maximum mark is ten in each department, and six is required to pass a student.

### Memoirs and Summer Work

36 During the vacations following the close of each year, memoirs on subjects which will be assigned are required of students as follows : of students in the courses of electrical engineering, of analytical and applied chemistry, and of architecture, at the close of each year ; of students in the course of geology and palæontology, at the close of the third year. The time specified for the completion and handing in of memoirs in chemistry and electrical engineering is November 1st of each year ; for other memoirs and summer work the time specified is the second Monday in October.

37 Students of the second, third and fourth classes who fail to hand in the memoirs, drawings, and other summer work required of them under the rules by a specified time shall not be permitted to hand them in until the beginning of the next academic year and failing in this latter requirement they shall be dropped from the roll of the class. This requirement may be waived for reasons of weight in the case of students of the fourth class.

### Special Students

38 Graduates of the School of Mines, and of other institutions of like grade and standing, may pursue any subjects taught in the school for which they are properly qualified.

39 Permission to pursue special courses is sometimes given, for reasons of weight, to persons of mature age who are not graduates, but special students are not desired in the regular professional courses.

### The Laboratories and Drawing Academies

40 No student will be allowed in a laboratory or a drawing academy at a time when his attendance there is not due. During hours assigned for practical work in each of the laboratories, and in the drawing academies, the attendance of students will be required. A record of the daily attendance and of the progress of each student will be kept by the officer in charge.

41 The attendance of students of the first and second years in the drawing-room at such times as they are not engaged at lectures, between 9.30 A.M. and

1.30 P.M., is obligatory for students in engineering and architecture, for such hours and times as may be selected by the professors of engineering and architecture.

### Order

42 Good order and gentlemanly deportment are required of all students, as a condition of attendance upon the exercises of the school.

43 Smoking is prohibited in the College buildings.

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NOTE.—To render unnecessary many inquiries addressed to the registrar, it is here stated that there are no dormitories attached to the school.

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### Summer Schools and Excursions

During the session, the students may visit the different machine shops, electrical and metallurgical establishments, and chemical works of the city and its environs.

CLASS IN MECHANICAL ENGINEERING—During the third year students in the courses of engineering may join a volunteer class in practical mechanical engineering under the supervision of the professor of mechanical engineering.

SUMMER SCHOOL IN SURVEYING—During the latter part of the vacations following the close of the first and second years, students in the courses of mining and civil engineering, metallurgy, and geology are required to join the summer school in surveying under the direction of the instructor in civil engineering.

During the latter part of the vacation following the close of the third year, students in the courses of mining and civil engineering are required to attend a class in railroad surveying for a period of three weeks. The students in the mining engineering course have the option of attending this class in the vacation following the close of the second year. The class is under the direction of the instructor in civil engineering.

SUMMER SCHOOL IN GEODESY—During the vacation following the close of the third year, students in the course of civil engineering are required to attend a summer school in geodesy for six weeks. The class is under the supervision of the professor of astronomy.

SUMMER SCHOOL IN MINING—During the vacation following the close of the third year, students in the courses of mining engineering and metallurgy are required to visit the mines and engage in actual work or study under the superintendence of the adjunct professor of mining. This summer school is open to second-year students, *without conditions*, as an optional course.

## Part II

### GRADUATE COURSE IN SANITARY ENGINEERING

The full course for the degree of Sanitary Engineer occupies two years.

The instruction is arranged as follows :

**THE GENERAL PRINCIPLES OF HYGIENE**—courses of diseases, modes of determining their presence and of preventing and destroying them ; bacteriology ; organization and duties of health authorities ; sanitary jurisprudence.

**ORGANIC CHEMISTRY**—general principles and methods of analysis.

**WATER SUPPLY**—rainfall, flow of streams, storage of water, quantity required for cities and town, asylums and hospitals ; impurities of water, their origin and nature, whether occurring at its source, in storage, or in distribution, and methods of purification, by screens, filter-beds, infiltration galleries, and chemical processes ; analysis, microscopical and chemical.

**AIR**—composition, its impurities, effect of these on the sanitary condition of cities and towns, hospitals, asylums, public and private dwellings.

**SOIL**—methods of studying the topographical and geological features of a district in reference to the effect of the quality and characteristics of the soil upon the drainage and other sanitary conditions, the locations of cemeteries.

**HOUSE DRAINAGE**—water supply and drainage of public buildings and private dwellings, connected with the removal of laundry, sink, and closet refuse ; practical elements of plumbing.

**SEWAGE**—removal and disposal by various methods, including the frequent and systematic removal from cesspools and privies, accompanied by disinfection and deodorization, by the water-carriage system and pneumatic system, to points of its final disposition ; the construction of sewers, including combined and separate systems, outfalls, sea outfalls, tank sewers, ventilation of sewers, final disposition of sewage, garbage, and other refuse by cremation furnaces, irrigation, filtration, chemical precipitation ; the construction of plants and machinery for the same.

**VENTILATION**—quantity of air required under various conditions, methods of supplying or renewing air by natural or spontaneous means, by artificial means, including chimneys heated at the base by stoves, or steam coils, and removed by fans or blowers ; the determination of proper methods of introducing fresh air, its proper distribution, dimensions of the air conduits, and final rejection.

**HEATING**—the various means of heating by stoves, hot-air furnaces, hot water, and steam, and the most practical and efficient treatment of problems arising under various circumstances connected with public and private buildings ; the construction of the apparatus and the distribution of heat, whether in connection with or independent of the ventilation.

**DRAINAGE**—the drainage of rural districts for sanitary objects, the surface and subsoil drainage of cities and towns, drainage of sites for country dwellings, barns, and out-houses.

VILLAGE SANITATION—the construction, care, and management of cesspools and privies, and their disposition with regard to wells and dwellings; care of streets, gardens, and yards, with reference to the accumulation and removal of refuse, surface and subsoil drainage.

POLLUTION OF STREAMS—remedies to be adopted, and means of prevention.

ARRANGEMENTS FOR PREVENTING AND AMELIORATING THE UNHEALTHY CONDITIONS ARISING IN CERTAIN TRADES AND MANUFACTORIES.

STREETS AND PAVEMENTS, as affecting the health of communities.

THE PRINCIPLES OF HEAT AND THERMODYNAMICS, applicable to all constructions connected with heating and ventilation, including boilers, radiators, and flow of air through conductors.

INSPECTION—methods of examination of the sanitary conditions of public and private buildings, towns and villages, and of sewers, drains, and water-courses; methods of disposal of sewage and garbage; official inspections by members of boards of health; organizations of health commissions.

Candidates for the degree of sanitary engineer will be required to hand to the professor of civil engineering, at the end of the course, a thesis approved by the Faculty, on some subject connected with sanitary engineering, and will also be required to pass satisfactory examinations in the subjects taught.

Graduates of the School of Mines and of other institutions are admitted to the post-graduate course in sanitary engineering without examination, provided they have completed the studies which qualify them to pursue the course with advantage.

Persons who are not graduates may be admitted to the course in sanitary engineering, provided they pass the required examinations.

College diplomas and certificates will be accepted in lieu of examination for the subjects which they cover, *if satisfactory to the examining officers*.

Candidates for admission must pass satisfactory examinations in:

*Mathematics:*

Arithmetic, including the metric system of weights and measures; Algebra, the equivalent of Peck's Manual of Algebra; Geometry, Trigonometry, and Mensuration, the equivalent of Davies' Legendre; Analytical Geometry, the equivalent of Wentworth's Analytical Geometry; Differential and Integral Calculus, the equivalent of Osborne's.

*Mechanics:*

The equivalent of Parts I, II, III, and V of Rankine's Applied Mechanics.

*Thermodynamics:*

The equivalent of Pupin's Thermodynamics of Reversible Cycles.

*Physics:*

The equivalent of Atkinson's Ganot's Physics, which includes magnetism.

*Chemistry:*

The equivalent of the inorganic portion of Fownes' Manual of Chemistry. Also the chemistry of air; water; artificial illumination; photography; limes, mortars, and cements; building stones; decay and preservation; timber and its preservation; pigments, paints, essential oils, varnishes; glass and ceramics; explosives: gun-powder, gun cotton, and nitro-glycerine.

*Biology :*

Parker's Elementary Biology, or its equivalent.

*Botany :*

The equivalent of Bastin's College Botany.

*Geology :*

Lithological, cosmical, physiographic ; historical, including palæontology (equivalent to Dana's Manual).

*Surveying :*

Use of level, transit, and plane-table, and methods of making topographical surveys.

*Engineering :*

General principles relating to materials and structures, physically and mechanically considered. Materials : stone, cements, brick, metals, timber, treated in regard to strength, durability, mode of preparation, defects, tests of quality, and fitness for special uses. Structures : earthwork, execution of earthwork, foundation and supports ; superstructure, joints ; strength and stiffness of parts ; special rules of construction for masonry of public buildings, retaining walls and arches.

*Hygiene and Sanitary Science :*

The causes of disease, methods of investigation and prevention ; vital statistics ; first aid to the injured ; blood, circulation ; muscles ; exercise ; nervous system ; bacteria ; contagious diseases ; digestion ; respiration ; ventilation ; water supply ; disposal of refuse ; drainage.

*Microscopy and Microbiology :*

Practical acquaintance with the handling of the microscope and microscopical mounting. Biological examination of a potable water, and of bacteria from one colony.

*Graphics :*

The equivalent of Church's Descriptive Geometry.

*Drawing :*

Consisting of free-hand sketching, lettering, instrumental and projection drawing, topographical drawing.

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## Part III

### ELECTIVE COURSES OPEN TO SENIORS AND SPECIALS IN THE SCHOOL OF ARTS

Members of the senior class and specials in the School of Arts are admitted to all the studies of the first year in the School of Mines and to such other courses in the School of Mines as may be allowed by the Dean of the School of Arts with the consent of the head of the department concerned.



UNIVERSITY COURSES FOR THE DEGREES OF MASTER  
OF ARTS AND DOCTOR OF PHILOSOPHY, AND  
SPECIAL COURSES

For these courses see statements of Departments of Instruction as follows :

Architecture, page 37

Chemistry, page 48

Civil Engineering, page 59

Electrical Engineering, page 69

Mechanical Engineering, page 65

Mining, page 99

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APPARATUS SUPPLIES

1 Students may purchase apparatus of any of the dealers in the city.

2 To avoid inconvenience and expense to the students, and to secure a proper selection, the school undertakes, at considerable trouble and expense, to lend apparatus on the following conditions :

(a) Each student engaged in laboratory work must make a deposit of forty dollars (\$40) with the registrar, which deposit will be credited to him on the ledger. In case of excessive draughts of apparatus an additional deposit may be required.

(b) Each student shall be entitled, on presenting his receipt at the apparatus room, to draw the regular set of apparatus for qualitative, quantitative, or organic analysis, for assaying, for microscopy, or for bacteriology, according to his deposit, and from time to time to obtain ordinary articles which he may need, and these will be charged to him. At the end of the year he will be credited with those articles which he returns in good order, and the value of those which he has injured or broken will be deducted from his deposit.

(c) The apparatus room will be open for issuing apparatus every day at convenient hours.

(d) No charge is made for ordinary chemicals.

## REGISTER OF STUDENTS

### ABBREVIATIONS

(A).....	Course in Architecture
(C).....	Course in Analytical and Applied Chemistry
(C E).....	Course in Civil Engineering
(E E).....	Course in Electrical Engineering
(G).....	Course in Geology and Palæontology
(M).....	Course in Metallurgy
(M E).....	Course in Mining Engineering

Addresses other than those in New York are enclosed in parentheses

## UNDERGRADUATE COURSES

### FOURTH CLASS

NAME	RESIDENCE	CITY ADDRESS
Augustus Nichols Allen, A.B. (A)	<i>New York City</i>	23 West 50th st.
John Lorillard Arden, Ph.B. (E E)	<i>Garrison, N. Y.</i>	
Frederick Auryansen (C E)	<i>Piermont, N. Y.</i>	
Solomon D. Benoliel, B.S. (E E)	<i>New York City</i>	120 West 35th st.
Reed Raymond Bishop (E E)	<i>New York City</i>	311 West 54th st.
Edward Joseph Carney (C E)	<i>New York City</i>	67 West 68th st.
Allan Jay Clark (M E)	<i>New York City</i>	873 Madison ave.
James Musgrave Aertsen Darrach (A)	<i>Morristown, N. J.</i>	16 East 28th st.
Charles Cherleth, Jr., B.S. (C E)	<i>New York City</i>	674 East 135th st.
Louis Victor Emanuel (M E)	<i>New York City</i>	925 Park ave.
Lindley Murray Franklin, Jr. (A)	<i>Flushing, L. I.</i>	
Goldwin Goldsmith (A)	<i>New Rochelle, N. Y.</i>	417 Madison ave.
Louis Gottschall (A)	<i>New York City</i>	207 East 53d st.
Herbert Durand Hawks (E E)	<i>New York City</i>	40 West 55th st.
George Gustav Heye (E E)	<i>New York City</i>	11 East 48th st.
Edwin Chapin Holden, B.S. (M E)	<i>New York City</i>	17 West 132d st.
Charles Edward Hyatt (E E)	<i>Newark, N. J.</i>	(70 Park pl.)
Henry St. John Hyde (C)	<i>New York City</i>	210 East 18th st.
Jacob Jacobs (C E)	<i>New York City</i>	171 Broome st.
Joseph Lowenstein (C)	<i>Newark, N. J.</i>	(205 Belmont ave.)

NAME	RESIDENCE	CITY ADDRESS
William Lytle McConway (M E)	<i>Pittsburgh, Pa.</i> (409 Washington ave., Brooklyn, N. Y.)	
Paul MacGahan (E E)	<i>New York City</i>	75 East 61st st.
Donald MacGregor (A)	<i>New York City</i>	1118 Madison ave.
Ambrose Monell, Jr. (E E)	<i>New York City</i>	43 Lafayette pl.
Hardman Philips Alan Montgomery (A)	<i>New York City</i>	1189 Madison ave.
George Tremaine Morse (A)	<i>Brooklyn, N. Y.</i>	(613 Carlton ave.)
Edward Necarsulmer (A)	<i>New York City</i>	109 East 70th st.
Charles Of (M E)	<i>New York City</i>	892 Prospect ave.
Robert Kitching Painter (M E)	<i>New Brunswick, N. J.</i>	(5 Union st.)
Joel Pemoff (C E)	<i>New York City</i>	244 East Broadway
Charles Langdon Perry (E E)	<i>New York City</i>	14 Hampden st.
Herman Alfred Prosser (M E)	<i>Brooklyn, N. Y.</i>	(406 Stuyvesant ave.)
William Oakley Raymond (A)	<i>New York City</i>	31 West 82d st.
Arthur Emil Riedel (M E)	<i>New York City</i>	146 Delancey st.
Charles Rodenburg (C E)	<i>New York City</i>	428 West 44th st.
David Charles Serber (C E)	<i>New York City</i>	194 East Broadway
Elliot Mathews Sergeant (E E)	<i>Summit, N. J.</i>	
Edward Isaac Shire (A)	<i>New York City</i>	109 East 61st st.
Walter Irvine Slichter (E E)	<i>New York City</i>	127 West 58th st.
Henry Stern (A)	<i>New York City</i>	230 East 69th st.
William Gabriel Tachau (A)	<i>Louisville, Ky.</i> (57 Highland ave., Yonkers, N. Y.)	
William Stevens Thyng (M E)	<i>Deerfield, Mass.</i>	114 East 54th st.
Max Bernard Toch (A)	<i>New York City</i>	34 West 92d st.
Edward De Voe Tompkins (C E)	<i>New York City</i>	632 West End ave.
Samuel George Fitzhugh Townsend, A.B. (E E)	<i>New York City</i>	131 Fifth ave.
Josiah Thomas Tubby, Jr. (A)	<i>Brooklyn, N. Y.</i>	(67 Willow st.)
William Cullen Uhlig (C)	<i>New York City</i>	229 East 12th st.
Boyd Van Benthuisen (A)	<i>Albany, N. Y.</i>	24 East 47th st.
Arthur Pine Van Gelder (C)	<i>Catskill, N. Y.</i>	114 East 54th st.
William Watson, Mech. Eng. (M E)	<i>Cleveland, Ohio</i>	238 West 44th st.
George William Lane Woodruff, Ph.B. (E E)	<i>New York City</i>	27 East 22d st.
Fourth Class..... 51		

## THIRD CLASS

Walter Clymer Barnes (E E)	<i>Paterson, N. J.</i>	(505 Broadway)
David Elder Baxter (C E)	<i>New York City</i>	32 West 60th st.
John Jacob Bellman (E E)	<i>New York City</i>	90 King st.
Harrison Kerr Bird (E E)	<i>New York City</i>	33 East 72d st.
George Abraham Boehm (A)	<i>New York City</i>	33 West 89th st.
Emil Christian Boerner, Jr. (E E)	<i>Port Chester, N. Y.</i>	
George Sylvester Brackett (M E)	<i>Cumberland, Md.</i>	43 West 92d st.
Alexander Morrison Brown (M E)	<i>New York City</i>	245 West 54th st.
Harris Sutton Burroughs (E E)	<i>Brooklyn, N. Y.</i>	(1390 Dean st.)

NAME	RESIDENCE	CITY ADDRESS
Gale Hogeboom Carter (M E)	<i>New York City</i>	130 East 24th st.
Henri George Francis James Chatain (EE)	<i>New York City</i>	47 West 71st st.
Charles Martin Clark (E E)	<i>New York City</i>	831 Madison ave.
Herbert Wheaton Congdon (A)	<i>Brooklyn, N. Y.</i>	(194 Clinton st.)
Frederick Coykendall, A.B. (C E)	<i>Rondout, N. Y.</i>	
	Hotel Marie Antoinette, 66th st. and Boulevard	
Stewart Hooker Crampton (E E)	<i>Brooklyn, N. Y.</i>	(95 Gates ave.)
William Stewart Davidson (M E)	<i>Sherbrooke, Quebec, Canada</i>	
	(683 Leonard st., Brooklyn, N. Y.)	
Theakston de Coppet (A)	<i>New York City</i>	22 West 17th st.
Horace Dowie, A.B. (E E)	<i>Brooklyn, N. Y.</i>	(363 Jefferson ave.)
Alexander Simpson Farmer (C E)	<i>Brooklyn, N. Y.</i>	(147 South 5th st.)
Dexter Newell Force, Jr. (E E)	<i>Montclair, N. J.</i>	28 East 47th st.
Henry Vernon Foster (C E)	<i>Westerly, R. I.</i>	137 West 47th st.
Charles Herman Fulton (M E)	<i>Brooklyn, N. Y.</i>	(229 Fifth ave.)
Albert Rolaz Gallatin, A.B. (E E)	<i>New York City</i>	58 West 55th st.
Abner Winthrop Gill, A.B. (C E)	<i>Leonia, N. J.</i>	
Richard David Godley, Jr. (E E)	<i>Whitestone, L. I.</i>	
John Wesley Goodridge (C E)	<i>Brooklyn, N. Y.</i>	(981 Greene ave.)
August Henry Gotthelf (C)	<i>Hastings-on-Hudson, N. Y.</i>	
Henry Herz (A)	<i>Jersey City, N. J.</i>	(142 Mercer st.)
Charles Valentine Hesselbach, A.B. (C E)	<i>New York City</i>	93 Lexington ave.
Leo Walter Hildburgh (E E)	<i>New York City</i>	Park Ave. Hotel
Frederick Montgomery Holbrook (E E)	<i>New York City</i>	645 Prospect ave.
Delos Holden, B.S. (E E)	<i>Pueblo, Col.</i>	114 East 54th st.
Richard Willis How, Jr. (C E)	<i>Wantagh, L. I.</i>	
Hanford Chase Judson (E E)	<i>Dobbs Ferry, N. Y.</i>	
Edwin Kaufmann (A)	<i>New York City</i>	49 East 66th st.
William George Kilian (A)	<i>New York City</i>	352 West 33d st.
Newton Booth Knox, A.B. (M E)	<i>San Francisco, Cal.</i>	301 West 55th st.
Richard Koch (E E)	<i>New York City</i>	47 East 78th st.
Russell Lane (C)	<i>Orange, N. J.</i>	(26 Clarendon pl.)
Max Loewenthal (E E)	<i>New York City</i>	248 East 78th st.
Richard Stanislaus McCaffery (M E)	<i>New York City</i>	316 East 124th st.
Charles William MacMullen (E E)	<i>New York City</i>	521 West 161st st.
John Henry Madden (C E)	<i>New York City</i>	308 West 30th st.
George Willard Magalhães (E E)	<i>Flatbush, L. I.</i>	(11 Lincoln road)
Hugh Sisson Magruder, A. B. (A)	<i>Roland Park, Md.</i>	130 West 45th st.
Oscar Raymond Maicas (C E)	<i>New York City</i>	154 West 88th st.
Leo Raphael Manheims (E E)	<i>New York City</i>	164 East 79th st.
Arthur Metzger (C)	<i>New York City</i>	43 East 72d st.
Henry Bedinger Mitchell (E E)	<i>Flushing, L. I.</i>	74 Leonard st.
Seymour Perkins (C E)	<i>New York City</i>	42 West 46th st.
Herman Philip Ralph (C E)	<i>New York City</i>	2305 Monroe ave.
Joseph Rapaport (E E)	<i>Brooklyn, N. Y.</i>	(109 Decatur st.)
George Washington Regan (E E)	<i>Brooklyn, N. Y.</i>	(352 Degraw st.)

NAME	RESIDENCE	CITY ADDRESS
William Howe Ripley, A.B. (E E)	<i>New York City</i>	605 Lexington ave.
Charles Edward Rogers (C E)	<i>New York City</i>	6 West 125th st.
William Ropes (C E)	<i>Brooklyn, N. Y.</i>	74 Wall st.
William Newton Ryerson (E E)	<i>Montclair, N. J.</i>	
John Hunting Sayres (C E)	<i>Brooklyn, N. Y.</i>	(456 Classon ave.)
Walter William Schlecht (C E)	<i>New York City</i>	446 East 57th st.
Davison Heermance Smith (E E)	<i>New York City</i>	15 East 38th st.
Herbert James Smith (E E)	<i>New York City</i>	152 West 77th st.
Oscar Bloodgood Smith, Jr. (A)	<i>Morristown, N. J.</i>	37 Broad st.
Isaac Stander (C E)	<i>New York City</i>	64 Avenue D
Joseph Suydam Stout, Jr., A.B. (E E)	<i>New York City</i>	35 East 67th st.
Edward Barney Sturgis (M E)	<i>New York City</i>	307 East 17th st.
Rowland Gilbert Tibbals (C E)	<i>Brooklyn, N. Y.</i>	(148 Milton st.)
Christopher Van Deventer, (E E)	<i>Knoxville, Tenn.</i>	626 Lexington ave.
Joseph Van Vleck, Jr. (A)	<i>Montclair, N. J.</i>	28 East 47th st.
Charles Adolph Waldenberger (C)	<i>New York City</i>	155 East 37th st.
Lazarus White (C E)	<i>New York City</i>	14 East 120th st.
Charles Shepard Witherell (M)	<i>Greenwich, Conn.</i>	195 Madison ave.
Third Class . . . . . 71		

## SECOND CLASS

George Christian Anthon (E E)	<i>New York City</i>	13 West 35th st.
Morton Arendt (E E)	<i>New York City</i>	42 West 126th st.
Franklin Lawrence Babcock (E E)	<i>Riverdale-on-Hudson, N. Y.</i>	
Putnam Asbury Bates (E E)	<i>New York City</i>	113 West 72d st.
Alfred Chester Beatty (M E)	<i>New York City</i>	3 East 9th st.
George Lewis Bennett (C E)	<i>Brooklyn, N. Y.</i>	(210 Putnam ave.)
Wray Annin Bentley (C)	<i>Brooklyn, N. Y.</i>	(1228 Fulton ave.)
William Arthur Bostwick (M)	<i>New York City</i>	324 West 46th st.
Herbert Doty Brown, A.B. (C E)	<i>New York City</i>	9 West 129th st.
Victor Buchanan Buck, Jr. (M)	<i>Kansas City, Mo.</i>	Hotel Netherland
William Gibson Burns (E E)	<i>Brooklyn, N. Y.</i>	(481 Putnam ave.)
Charles Howard Burnside (A)	<i>Oskaloosa, Iowa</i>	447 Lexington ave.
Tristram Roberts Coffin (C E)	<i>New York City</i>	258 West 72d st.
John Thompson Conover (E E)	<i>New York City</i>	324 West 19th st.
Guy Whitmore Culin (C E)	<i>New York City</i>	122 East 70th st.
Edwin Howell Daly (E E)	<i>New York City</i>	170 Broadway
Nathaniel Wheaton Dexter, A.B., (A)	<i>Pawtucket, R. I.</i>	106 West 64th st.
Arthur Diamond Dunn (E E)	<i>New York City</i>	164 East 111th st.
James Jacob Ehrenreich (E E)	<i>New York City</i>	48 East 74th st.
Emerson Foote, Jr. (E E)	<i>New York City</i>	30 West 11th st.
John Henry Fulle (E E)	<i>New York City</i>	1626 Madison ave.
Bernard Lenord Gabriel (C E)	<i>New York City</i>	739 East 139th st.
William King Gregory (E E)	<i>New York City</i>	179 West 10th st.
George Bain Gunn (C E)	<i>East Orange, N. J.</i>	(139 Munn ave.)



NAME	RESIDENCE	CITY ADDRESS
Rowland Francis Hill, Jr. (M E)	<i>New York City</i>	31 East 75th st.
Eugene Helms Hodgson (C)	<i>Brooklyn, N. Y.</i>	(848 President st.)
James Barnes Humphreys (E E)	<i>New York City</i>	23 East 47th st.
William Phelps Jones (E E)	<i>New York City</i>	312 West 28th st.
Theodore Harold Joseph (E E)	<i>New York City</i>	32 East 74th st.
Joseph Day Knap (C E)	<i>New York City</i>	256 West 73d st.
Henry Krumb (M E)	<i>Brooklyn, N. Y.</i>	(55 Ten Eyck st.)
Joseph Albert Augustin Le Prince (C E)	<i>New York City</i>	170th st. and Edgecomb ave.
Edmund Julius Levine (C)	<i>New York City</i>	23 East 72d st.
Clarence McKenzie Lewis (C E)	<i>New York City</i>	104 East 37th st.
Howard Lichtenstein (E E)	<i>New York City</i>	14 West 74th st.
Johnston Livingston, Jr. (E E)	<i>Islip, N. Y.</i>	56 East 49th st.
Gustavo Lobo (E E)	<i>New York City</i>	219 West 44th st.
Orleans Longacre, Jr. (M E)	<i>New York City</i>	Spuyten Duyvil
Christopher Meyer Lowther (E E)	<i>Riverside, Conn.</i>	
George Latimore Lucas (C E)	<i>Kingsbridge, New York City</i>	
Irving Smith Lydecker (M E)	<i>New York City</i>	562 East 155th st.
William James McClure (E E)	<i>New York City</i>	259 West 52d st.
Ralph Clapp McLain (E E)	<i>New York City</i>	53 West 57th st.
John Malcolm McLean (E E)	<i>New York City</i>	204 West 36th st.
Hugh McLellan (A)	<i>New York City</i>	108 East 18th st.
John Campbell Maben, Jr. (M E)	<i>New York City</i>	7 East 35th st.
Charles Hudson Machen (E E)	<i>New York City</i>	150 West 82d st.
Henry Bennett Machen (C E)	<i>New York City</i>	150 West 82d st.
Lucius Trowbridge Martin (E E)	<i>New York City</i>	114 East 36th st.
Isaac Menline (C E)	<i>New York City</i>	356 East 69th st.
Archibald LeRoy Miller (C E)	<i>Brooklyn, N. Y.</i>	(113 Henry st.)
Monson Morris (E E)	<i>New York City</i>	14 East 63d st.
Henry Coit Mortimer, Jr. (E E)	<i>New York City</i>	54 West 21st st.
Mortimer Lewis Newman (E E)	<i>New York City</i>	107 East 90th st.
William Aloysius O'Connor (A)	<i>New York City</i>	12 East 44th st.
Ignatius O'Reardon (C E)	<i>New York City</i>	229 East 18th st.
Fred Harte Page (A)	<i>New York City</i>	313 West 77th st.
Francis Fletcher Palmer (E E)	<i>New York City</i>	922 Fifth ave.
Otto Fred Pattberg (M E)	<i>Jersey City Heights, N. J.</i>	(74 Sherman pl.)
Thomas Bloodgood Peck, Jr. (E E)	<i>New York City</i>	111 East 34th st.
Aaron Israel Raisman (C E)	<i>Newark, N. J.</i>	(50 Wallace st.)
George Washington Rappold (A)	<i>Brooklyn, N. Y.</i>	(750 Flushing ave.)
Max Raymond (C E)	<i>New York City</i>	166 Henry st.
Edgar Poe Reiss (E E)	<i>Brooklyn, N. Y.</i>	(302 McDonough st.)
Emil Justus Riederer (C)	<i>New York City</i>	145 West 94th st.
George Crosby Saunders, B.S. (C E)	<i>New York City</i>	104 West 92d st.
Walter Seeley (C E)	<i>New York City</i>	76 West 103d st.
Gustavus Sessinghaus (M E)	<i>St. Louis, Mo.</i>	219 West 44th st.
Alexander Leopold Sinsheimer (E E)	<i>New York City</i>	7 East 80th st.

NAME	RESIDENCE	CITY ADDRESS
Benjamin Emanuel Stern (A)	<i>New York City</i>	32 East 126th st.
Albert Gladding Stillwell (C)	<i>Brooklyn, N. Y.</i>	(164 St. John's pl.)
Harry Herbert Sutro (C)	<i>New York City</i>	60 West 49th st.
James Lloyd Tatlock (C E)	<i>Pelham Manor, N. Y.</i>	
Alfred Samuel Guido Taylor, A.B. (A)	<i>New York City</i>	205 West 57th st.
Harold Abbot Titcomb, A.B. (M E)	<i>Brooklyn, N. Y.</i>	(101 Lafayette ave.)
Ramiro Trapote (C E)	<i>Pontevedra, Spain</i>	130 West 29th st.
Bartow White Van Voorhis, 2d (E E)	<i>New Brighton, S. I.</i>	
Raymond Duy Weekes (A)	<i>New York City</i>	46 Cortlandt st.
Dana Clemmer Wells, A.B. (E E)	<i>Brooklyn, N. Y.</i>	(109 Willow st.)
Hans Hermann Wolff (C E)	<i>New York City</i>	224 West 79th st.
Second Class.....		80

## FIRST CLASS

Harry Austin Armitage (E E)	<i>New York City</i>	283 Alexander ave.
Edward Maitland Armstrong (A)	<i>New York City</i>	58 West 10th st.
Charles Sidney Aylmer-Small (E E)	<i>New York City</i>	209 West 21st st.
Albert Philip Baumann (M E)	<i>New York City</i>	228 East 52d st.
George Strong Baxter, Jr. (E E)	<i>Montclair, N. J.</i>	18 Wall st.
Henry Ludlow Beadel (A)	<i>New Brighton, S. I.</i>	120 Front st.
Oscar Charles Beck (C)	<i>New York City</i>	45 St. Marks pl.
William Allen Belden (E E)	<i>New York City</i>	318 West 78th st.
Clarence Frank Bell (M E)	<i>New York City</i>	1204 Boston ave.
Eli Benedict (A)	<i>New York City</i>	167 West 71st st.
Richard Bigelow (E E)	<i>Ridgewood, N. J.</i>	56 West 54th st.
Theodore Blondel, Jr. (A)	<i>New York City</i>	548 Mott ave.
Edward Blum (A)	<i>New York City</i>	1005 Madison ave.
Henry Abraham Boehm (A)	<i>New York City</i>	33 West 89th st.
Walter Bennett Borg (C E)	<i>New York City</i>	4 East 68th st.
John Dalzell Boyd (A)	<i>New York City</i>	308 West 73d st.
Frederick Weber Brower, Jr. (A)	<i>New York City</i>	35 West 58th st.
Mortimer Drake Bryant (E E)	<i>Brooklyn, N. Y.</i>	(539 Bedford ave.)
William Bernard Bryant (E E)	<i>Brooklyn, N. Y.</i>	(539 Bedford ave.)
John Cabot, Jr. (M E)	<i>New York City</i>	168 West 48th st.
Bayard Snowden Cairns, A.B. (A)	<i>New York City</i>	40 Grove st.
Henry Cannon Carpenter (E E)	<i>New York City</i>	113 East 69th st.
Walter Casamajor (C)	<i>Brooklyn, N. Y.</i>	(372 Greene ave.)
Kenneth Lincoln Caswell (A)	<i>New York City</i>	103 East 40th st.
Eladio Arthur Chao (E E)	<i>New York City</i>	45 West 32d st.
Howard Chapman (A)	<i>Brooklyn, N. Y.</i>	(160 Hicks st.)
Louis Floro Chibas (M E)	<i>Guantanamo, Cuba</i>	219 West 44th st.
Frederic Edwin Church (A)	<i>Brooklyn, N. Y.</i>	(124 Milton st.)
Josiah Huntoon Clark (M E)	<i>Paterson, N. J.</i>	(238 Broadway)
Henry Manning Cogan (E E)	<i>Bay Ridge, Brooklyn, N. Y.</i>	(Shore road)
Simeon Edward Cohn (E E)	<i>New York City</i>	31 West 58th st.

NAME	RESIDENCE	CITY ADDRESS
Irving Corbin (E E)	<i>Brooklyn, N. Y.</i>	(296 McDonough st.)
Henry Erastus Crawford (M E)	<i>New York City</i>	220 West 28th st.
Bradford Darrach, Jr. (C E)	<i>Elizabeth, N. J.</i>	(567 North Broad st.)
Lynley Seymour Davis (A)	<i>New York City</i>	16 East 45th st.
William Adams Delano, A.B. (A)	<i>New York City</i>	42 Fifth ave.
Isodore Delson (C E)	<i>New York City</i>	203 East 69th st.
Frank Secor Dickerson, (E E)	<i>New York City</i>	22 East 73d st.
Alfred Elliot Dieterich (C E)	<i>New York City</i>	142 West 82d st.
Leicester Durham (C E)	<i>Brooklyn, N. Y.</i>	(125 Brooklyn ave.)
David Charles Eccles (C)	<i>Brooklyn, N. Y.</i>	(191 Dean st.)
Charles Hammond Eckerson (M E)	<i>Closter, N. J.</i>	
Allen Fullton Edwards (E E)	<i>New York City</i>	52 East 56th st.
William Emerson, A.B. (A)	<i>New York City</i>	81 Madison ave.
George Gilbert Entz (A)	<i>New York City</i>	24 East 83d st.
Myron Samuel Falk (C E)	<i>New York City</i>	Hotel Netherland
William Henry Fearing, Jr. (C E)	<i>New York City</i>	7 East 43d st.
Abraham Lincoln Fechheimer (A)	<i>Cincinnati, Ohio</i>	57 West 56th st.
Garwood Ferguson (C E)	<i>Paterson, N. J.</i>	(371 Fifteenth ave.)
Henry Fisher, B.S. (C)	<i>New York City</i>	108 East 70th st.
Robert Anton Fliess (E E)	<i>New York City</i>	201 West 55th st.
Oscar Riker Foster (M)	<i>Brooklyn, N. Y.</i>	(377 Quincy st.)
Augustus Alphonsus Frank (E E)	<i>New York City</i>	106 West 69th st.
Richard Geppert (M E)	<i>Newark, N. J.</i>	(20 Mercer st.)
Philander Hanford Godwin (C E)	<i>New York City</i>	125 West 122d st.
Edwin Sydney Goldstein (A)	<i>Cincinnati, Ohio</i>	20 Sutton pl.
Myron Evans Greene (E E)	<i>New York City</i>	417 West 23d st.
Harry Westervelt Gregg (E E)	<i>East Orange, N. J.</i>	78 Madison ave.
William James Griffiths, Jr. (E E)	<i>Mount Vernon, N. Y.</i>	(317 South Eighth ave.)
Alfred Hermann Gumaer (A)	<i>Fersey City, N. J.</i>	(292 Pavonia ave.)
Henry Philip Haar (E E)	<i>New York City</i>	450 West 152d st.
William Perry Hadwen, Jr. (E E)	<i>Montclair, N. J.</i>	(174 Orange road)
Charles Sidney Haight (A)	<i>New York City</i>	10 West 18th st.
Harold Newman Hall (A)	<i>Brooklyn, N. Y.</i>	(204 Hancock st.)
Alfred William Harrison (M E)	<i>Minneapolis, Minn.</i>	1828 Anthony ave.
Gouverneur Morris Haskell (E E)	<i>Bloomfield, N. J.</i>	290 Washington st.
Charles Fanning Hastings (C E)	<i>New York City</i>	15 West 50th st.
Stephen Olney Hawkins (A)	<i>Brooklyn, N. Y.</i>	(61 Lefferts pl.)
Max Gustave Heidelberg (A)	<i>New York City</i>	146 West 85th st.
Rudolph Ernst Heike (C)	<i>Fersey City, N. J.</i>	(256 Montgomery st.)
Henry Howison Henderson (C E)	<i>New York City</i>	54 West 87th st.
Bernhard Frederick Hermann (E E)	<i>New York City</i>	78 East 79th st.
Charles Lorin Holt, C.E. (A)	<i>New York City</i>	105 East 29th st.
Percy Kierstead Hudson (M E)	<i>New York City</i>	36 West 52d st.
Charles Southard Hulbert (E E)	<i>Hoboken, N. J.</i>	(627 Bloomfield st.)
William Bertram Imlach (M E)	<i>New York City</i>	62 West 56th st.
Jesse Leavenworth Ingersoll (M E)	<i>Tacoma, Wash.</i>	26 West 50th st.

NAME	RESIDENCE	CITY ADDRESS
Howard Blauvelt Jackson (E E)	<i>New York City</i>	120 West 79th st.
John Alexander Johnston (E E)	<i>New York City</i>	
	Hotel San Remo, 75th st. & Central Park, W.	
Andrew Norwood Jung, Jr. (E E)	<i>Brooklyn, N. Y.</i>	(15 South Portland ave.)
Charles Nelson Kent, Jr. (A)	<i>Merrick, N. Y.</i>	10 Spruce st.
Burdett Kipp (C E)	<i>New York City</i>	20 West 121st st.
Frederick Revell Kneeland (C)	<i>New York City</i>	239 West 74th st.
Walter Rosenstock Leventritt (A)	<i>New York City</i>	34 West 77th st.
William Wilson Lighthipe (E E)	<i>New York City</i>	179 West 10th st.
Howard Carlisle Loudon (A)	<i>Brooklyn, N. Y.</i>	(161 Keap st.)
James Bruce McClelland (A)	<i>New York City</i>	4 West 47th st.
Henry Knox McIntyre (E E)	<i>New York City</i>	303 West 74th st.
Julian Appleton Madan (C)	<i>New York City</i>	500 Madison ave.
Herbert Richard Mainzer (A)	<i>New York City</i>	9 East 66th st.
Louis Ewald Michel (E E)	<i>Union Hill, N. J.</i>	(319 Blum st.)
Alexander McPherson Mitchell (A)	<i>New York City</i>	811 West End ave.
Edward Stewart Moffatt, Jr. (M)	<i>Scranton, Pa.</i>	148 West 43d st.
William Charles Morrill (E E)	<i>New York City</i>	24 West 83d st.
Julius Müller (E E)	<i>New York City</i>	418 West 154th st.
George Robert Murphy, A.B. (E E)	<i>West Hoboken, N. J.</i>	(Box 268)
Nicholas Naday (C)	<i>New York City</i>	364 St. Nicholas ave.
Ainsley Cornell Oakley (E E)	<i>New York City</i>	101 West 72d st.
James William O'Connor (A)	<i>New York City</i>	8 East 12th st.
Harold Hoyle Oddie (C E)	<i>New York City</i>	59 West 48th st.
Clarence Milton Ogden (M E)	<i>Mount Vernon, N. Y.</i>	(47 Elm pl.)
Edward Saville Ogden (A)	<i>New York City</i>	165 West 58th st.
George Darmon Orner (E E)	<i>New York City</i>	1177 Third ave.
Charles Ludwig Otto (A)	<i>Brooklyn, N. Y.</i>	(885 Bushwick ave.)
Frederic Edgar Parmly (E E)	<i>New York City</i>	134 West 57th st.
Clarendon Henry Pfeiffer (E E)	<i>New York City</i>	
	"The Gerard,"	123 West 44th st.
William Rutger John Planten (C E)	<i>Brooklyn, N. Y.</i>	(38 Eighth ave.)
Arnold William Pupke (E E)	<i>New York City</i>	150 West 57th st.
Edward Washburn Rogers (E E)	<i>New York City</i>	372 Manhattan ave.
Juan Pablo Ros, A.B. (M E)	<i>Cienfuegos, Cuba</i>	39 West 26th st.
Victor Alfonso Ros, A.B. (E E)	<i>Cienfuegos, Cuba</i>	116 West 14th st.
Louis Mansfield Rossi (M E)	<i>Perth Amboy, N. J.</i>	134 West 83d st.
Edward Lansing Satterlee (A)	<i>New York City</i>	60 East 78th st.
William Hunt Schanck (C E)	<i>New York City</i>	101 West 73d st.
Mortimer Moses Scheyer (A)	<i>New York City</i>	1887 Madison ave.
Henry Schroeder (E E)	<i>New York City</i>	137 Madison ave.
George Oulton Seward (E E)	<i>East Orange N. J.</i>	(48 Hawthorne ave.)
Lawrence Mason Simonson (C E)	<i>New York City</i>	293 Lenox ave.
William Thornton Simpson (A)	<i>New York City</i>	458 West 24th st.
Burnett Smith (M E)	<i>New York City</i>	144 West 73d st.
Byron Weed Smith (E E)	<i>New York City</i>	52 West 91st st.
William Allen Smith, Jr. (M E)	<i>New York City</i>	102 East 57th st.

NAME	RESIDENCE	CITY ADDRESS
Frank Ransom Steven (E E)	<i>Brooklyn, N. Y.</i>	(264 Hicks st.)
Thomas Alexander Stratford (C E)	<i>Brooklyn, N. Y.</i>	(134 Berkeley pl.)
William Hargadine Thomson (M E)	<i>St. Louis, Mo.</i>	244 East 50th st.
Benjamin Bricklyn Tilt (E E)	<i>New York City</i>	5 East 67th st.
Herbert Van Wagenen, Jr. (A)	<i>New York City</i>	36 East 53d st.
Carl Hans Vom Baur (E E)	<i>New York City</i>	12 West 130th st.
Watson Vredenburgh, Jr. (C E)	<i>New York City</i>	Marcher ave., High Bridge
Otto Wagner (M E)	<i>Red Bank, N. J.</i>	49 East 72d st.
Rhineland Waldo (E E)	<i>New York City</i>	Madison ave. cor. 72d st.
Alan Haworth Ward (M E)	<i>Brooklyn, N. Y.</i>	(431 Washington ave.)
Arthur Ware (A)	<i>New York City</i>	1285 Madison ave.
Harry Simons Waterman (C E)	<i>Yonkers, N. Y.</i>	(166 Hawthorne ave.)
Frederic Robert Weekes (M E)	<i>New York City</i>	46 Cortlandt st.
Maximilian Weinstein (C E)	<i>New York City</i>	109 West 82d st.
Albert Ernest Weidinger (A)	<i>Englewood, N. J.</i>	
John Townsend Williams, Jr. (A)	<i>New York City</i>	871 Madison ave.
First Class .....		138

## SPECIAL COURSE

Paul Beck Belin, Ph.B. (A)	<i>Scranton, Pa.</i>	39 West 27th st.
Seymour Burrell (A)	<i>New York City</i>	76 West 48th st.
George Lincon Chase (Assaying)	<i>Providence, R. I.</i>	107 East 26th st.
Jules Francois George de Geofroy	<i>Washington, D. C.</i>	Albemarle Hotel
Lawrence Ewald (A)	<i>St. Louis, Mo.</i>	23 East 46th st.
Edward Rodney Forman (A)	<i>Brooklyn, N. Y.</i>	(188 Penn st.)
Harry Stewart Hall, C.E. (A)	<i>New York City</i>	681 Broadway
Augustus Zerega Huntington, Ph.B. (A)	<i>Plainfield, N. J.</i>	39 West 27th st.
Louis Edmond La Beaume (A)	<i>St. Louis, Mo.</i>	21 West 18th st.
Alfred William McCune, Jr. (C)	<i>Salt Lake City</i>	
Guy Crandall Mariner (A)	<i>St. Louis, Mo.</i>	23 East 46th st.
Henry Emil Merry (A)	<i>East Orange, N. J.</i>	(4 Maple ave.)
Clarence Amos Neff (A)	<i>Delaware, O.</i>	76 West 48th st.
Engelbert Neus, B.S. (A)	<i>New York City</i>	454 East 116th st.
Francis Newton (A)	<i>New York City</i>	781 Madison ave.
William Edward Parsons, A.B. (A)	<i>Akron, O.</i>	51 West 51st st.
William Arthur Payne, B.S. (A)	<i>New York City</i>	122 Madison ave.
William Glasgow Powell (A)	<i>Washington, D.C.</i>	6 East 47th st.
Oscar Holmes Sheffield, B.E., C.E. (A)	<i>Athens, Georgia</i>	682 Lexington ave.
Seymour Goodman Studley (A)	<i>Providence, R. I.</i>	244 East 50th st.
William Doniphan Thornton (M E)	<i>Butte, Mont.</i>	Hotel Netherland
Charles Wiley Tufts (A)	<i>Pittsburgh, Pa.</i>	76 West 48th st.
Frederick King Vreeland, Mech. Eng. (E E)	<i>Montclair, N. J.</i>	
Keitt Pinckney Walker (A)	<i>New York City</i>	235 West 76th st.
Albert Lent Watkins (C E)	<i>Orange, N. J.</i>	(7 Fuller Terrace)
Charles Wheeler Wilder (Assaying)	<i>New York City</i>	158 West 78th st.
Charles Chevrier Wright (A)	<i>Akron, O.</i>	51 West 51st st.
Special Students .....		27



# GRADUATE COURSES FOR THE DEGREES OF MASTER OF ARTS AND DOCTOR OF PHILOSOPHY

Following each student's name are printed in *italics*, the subjects pursued by him under the Faculty of Mines; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

## FOR THE DEGREE OF MASTER OF ARTS

NAME	RESIDENCE	CITY ADDRESS
Solomon D. Benoliel	<i>New York City</i>	120 West 35th st.
College of the City of New York, B.S. (1893)		
<i>Electrical Engineering</i> , Pure Science		
Alexander Rice McKim	<i>New York City</i>	106 East 23d st.
Massachusetts Institute of Technology, B.S. (1886)		
<i>Architecture</i> , Political Science		
Charles Paul Ernest Peugnet	<i>New York City</i>	231 West 45th st.
Columbia College, C.E. (1895)		
<i>Civil Engineering</i> , Pure Science, Political Science		
For Degree of Master of Arts.....		3

## FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Charles Thompson Mathews	<i>New York City</i>	254 Madison ave.
Yale College, A.B. (1886), A.M. (1892)		
Columbia College, Ph.B. (1889)		
<i>Architecture</i> , Philosophy		
For Degree of Doctor of Philosophy.....		1
Total.....		4

## SUMMARY

### Undergraduate Courses :

Fourth Class.....	51
Third Class .....	71
Second Class.....	80
First Class.....	138
	<hr/> 340

### Graduate Courses :

For Degree of Master of Arts.....	3
For Degree of Doctor of Philosophy.....	1
Specials.....	27
	<hr/>

31

Students in the School of Mines.....	371
Deduct for students pursuing more than one course,	1
	<hr/>

370

Students in the School of Arts.....	7
Student in the School of Law.....	1
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Grand Total.....	378
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## SCHOOL OF POLITICAL SCIENCE

The following departments are represented by the Faculty :

ECONOMICS AND SOCIAL SCIENCE	POLITICAL PHILOSOPHY PUBLIC LAW
POLITICAL ECONOMY AND STATISTICS	CONSTITUTIONAL LAW ADMINISTRATIVE "
FINANCE	INTERNATIONAL "
SOCIOLOGY	ROMAN LAW AND COM- PARATIVE JURISPRUDENCE
HISTORY	

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### Officers of the Faculty

JOHN W. BURGESS, Ph.D., LL.D.....	<i>Dean and ex-officio Member of the University Council</i>
FRANK J. GOODNOW, LL.D.....	<i>Secretary</i>
RICHMOND MAYO-SMITH, Ph.D.....	<i>Elected Delegate to the University Council</i>

### Faculty

SETH LOW, LL.D., *President*

JOHN W. BURGESS, Ph.D., LL.D.,	<i>Professor of History, Political Science, and Constitutional Law</i>
RICHMOND MAYO-SMITH, Ph.D.,	<i>Professor of Political Economy and Social Science</i>
MUNROE SMITH, A.M., J.U.D.,	<i>Professor of Roman Law and Comparative Jurisprudence</i>
FRANK J. GOODNOW, LL.D.,	<i>Professor of Administrative Law</i>
EDWIN R. A. SELIGMAN, LL.B., Ph.D.,	<i>Professor of Political Economy and Finance</i>
HERBERT L. OSGOOD, Ph.D.,	<i>Adjunct Professor of History</i>
WILLIAM A. DUNNING, Ph.D.,	<i>Adjunct Professor of History and Political Philosophy</i>
JOHN BASSETT MOORE, A.B.,	<i>Hamilton Fish Professor of International Law and Diplomacy</i>
FRANKLIN H. GIDDINGS, A.M.,	<i>Professor of Sociology</i>
JOHN B. CLARK, Ph.D.,	<i>Professor of Political Economy</i>
JAMES HARVEY ROBINSON, Ph.D.,	<i>Professor of History</i>
FREDERIC BANCROFT, Ph.D.,	<i>Lecturer on American History</i>
EDMOND KELLY, M.A.,	<i>Lecturer on Municipal Politics</i>

## Other Officers

WILLIAM Z. RIPLEY, Ph.D., *Prize Lecturer, 1893-96, on Physical Geography and Anthropology*

GEORGE L. BEER, A.M., *Prize Lecturer, 1894-97, on European History*

HARRY A. CUSHING, A.M., *Prize Lecturer 1895-98*

ARTHUR M. DAY, A.M., *Assistant in Economics*

## GENERAL STATEMENT

The Faculty of Political Science has charge of the university courses of study and research in political and social science, including history, economics, and public law.

The School of Political Science was opened on Monday, the fourth day of October, 1880.

The Faculty aims to give a complete general view of all the subjects of public polity, both internal and external, from the threefold point of view of history, law, and philosophy. The prime aim is therefore the development of all the branches of the political and social sciences. The secondary and practical objects are :

- (a) To fit young men for all the political branches of the public service.
- (b) To give an adequate economic and legal training to those who intend to make journalism their profession.
- (c) To supplement, by courses in public law and comparative jurisprudence, the instruction in private municipal law offered by the Faculty of Law.
- (d) To educate teachers of political and social science.

To these ends courses of study are offered of sufficient duration to enable the student not only to attend the lectures and recitations with the professors, but also to consult the most approved treatises upon the political sciences and to study the sources of the same.

Young men who wish to obtain positions in the United States Civil Service—especially in those positions in the Department of State for which special examinations are held—will find it advantageous to follow many of the courses under the Faculty of Political Science. Some of the subjects upon which applicants for these positions are examined are treated very fully in the curriculum of the school. Thus, extended courses of lectures are given on political geography and history, diplomatic history and international law, government, and administration.

The work in economics and sociology falls under three heads, viz. : the university courses of instruction in the various departments of social science, the work in the statistical laboratory, and the "field work," or practical work in connection with the Charity Organization Society, the Brooklyn Bureau of Charities, the University Settlement Society of New York City, and the East Side House. These are fully explained in the detailed circular of the School of Political Science.

## ADMISSION AND ATTENDANCE

Admission to the School of Political Science is ordinarily granted to students who have completed the curriculum of some college in good standing at least

to the close of the junior year. Other persons of suitable age and attainments may be admitted, to pursue special or partial courses, with the consent of the Dean and of the instructor. The lectures are also open to the public, on payment of an auditor's fee, and with the consent of the Dean and of the instructor. Auditors do not have, and cannot receive, any university recognition whatever. There are no formal examinations for admission. Applications for admission to the School of Political Science are received at any time by the Secretary, but it is generally advisable that they be presented, if possible, at the beginning of the academic year.

Students enrolled either in the General, in the Union, or in the Jewish Theological Seminary, in the City of New York, who may be designated for the privilege by the authorities of those institutions and accepted by the President of Columbia College, are admitted to the courses offered by the Faculty of Political Science free of charge for tuition.

By the terms of an alliance between Columbia College and Teachers College, at Morningside Heights, duly qualified students of Teachers College are permitted to enter courses offered by the Faculty of Political Science either as candidates for degrees or as special students.

All of these institutions offer reciprocal privileges to students of Columbia College.

An application for admission may be made by filling out and depositing a registration blank at the office of the Dean of the Faculty of Political Science, or at such other place as may be designated from time to time, for the purpose of registration.

Every student is required to file a list of his studies for the academic year at the time he registers, with the officer in charge of the registration, or within one week thereafter, at the office of the Dean. If he subsequently wishes to make any change in his studies, he must file written notice of his wish at the Dean's office, and must obtain the assent of the Dean.

Immediate written notice must be given to the Dean of any change of address.

Admission to the School of Political Science does not imply admission to candidacy for a degree. The conditions of candidacy for the several degrees are given below :

### ADMISSION TO OTHER COURSES

Any duly matriculated university student is at liberty to combine courses of study and investigation under this Faculty with courses offered by the School of Arts or by the University Faculties of Philosophy, Law, Medicine, Mines (Applied Science), and Pure Science without any additional fee.

Undergraduate studies of particular value to students in this school are as follows :

	Hours per week
Outline of Mediæval History (1st term) . . . . .	2
Outline of Modern History (2d term) . . . . .	2
Outline of European History since 1815 (1st term) . . . . .	2
American History (1st term) . . . . .	2
Elements of Political Economy (2d term) . . . . .	2
Economic History (1st term) . . . . .	2

Among the cognate courses given by the Faculty of Philosophy are :

History of philosophy, 2 hours a week ; ethics, 2 hours a week ; biological anthropology, 2 hours a week ; readings in Gaius and Ulpian, 1 hour a week ; readings in Anglo-Saxon law ; courses in the various modern languages, and others.

### FEES

(See page 18.)

### CANDIDATES FOR A DEGREE

Students are received as candidates for the degree of Bachelor of Arts, Master of Arts, Master of Laws, or Doctor of Philosophy.

If the applicant is a candidate for a degree, he must file a certificate, sufficient to furnish evidence of his completion of the junior year, or if he holds a degree from any institution, he must file diplomas or certificates sufficient to furnish evidence of such degree or degrees. Blanks for this purpose may be secured at the Dean's office. Certificates of graduation or dismissal from institutions of learning in foreign countries are also accepted. The certificates should be accompanied by catalogues or calendars of the colleges or other institutions of advanced grade at which the student has previously studied, which must be marked so as to show clearly his course of study there. This condition may be dispensed with in the case of those colleges and institutions whose bachelor's degree is recognized by the University Council as a basis for the higher degrees.

Students may present themselves for examination for a degree at any time during the year whenever the requirements as to residence and an essay or dissertation have been complied with.

### COURSE OF INSTRUCTION

For the courses offered for 1895-96 see departmental statements, as below. For more detailed account of the courses and for the tender of 1896-7, application should be made for circular of the School of Political Science.

**History and Political Philosophy, page 80**

**Public Law and Comparative Jurisprudence, page 87**

**Economics and Social Science, page 56**

### Seminaria

Outside of the regular instruction in the various subjects by lecture, it is the intention to furnish the students of the school an opportunity for special investigation of historical, legal, economic, and social questions under the directions of the professor. This is done by means of original papers prepared by the students. The papers are read before the professor and the students, and are then criticised and discussed. There will be at least one seminarium in



each subject. The number of meetings and the topics to be discussed are determined each year. Attendance at the seminarium in the major subject is necessary on the part of candidates for the degree of Master of Arts or Doctor of Philosophy.

There are also preliminary seminaria in history and political economy, designed primarily for those who are not fully prepared for the more advanced work. A preliminary seminarium taken by a candidate for the degree of Bachelor of Arts will count for one hour toward the fifteen hours necessary for a degree.

## ORDER OF STUDIES

It is recommended by the Faculty that students who intend to devote their whole time to the courses of study offered by this Faculty, take them in the following order :

### First Year

	Hours per week
Constitutional History of Europe, United States, and England . . . . .	6
Political Economy . . . . .	3
Science of Finance . . . . .	2
History of Political Theories . . . . .	3
Financial History of the United States (2d term) . . . . .	2
Tariff History of the United States (2d term) . . . . .	2
Practical Statistics (1st term) . . . . .	2
Physical Geography and Anthropology (1st term) . . . . .	2
Historical and Political Geography . . . . .	1
Institutes of Roman Law . . . . .	2

### Second Year

Comparative Constitutional Law of the principal European States and of the United States . . . . .	3
History of European Law . . . . .	2
Comparative Administrative Law of the United States, and of the principal European States . . . . .	2
History of Political Economy . . . . .	2
Communistic and Socialistic Theories . . . . .	2
Economic Theory . . . . .	2
Colonial History of the United States . . . . .	2
History of Diplomacy (1st term) . . . . .	2
History of American Diplomacy (2d term) . . . . .	2
American Political Philosophy . . . . .	1
History of the United States, 1848-61 (2d term) . . . . .	2
Sociology (1st term) . . . . .	2
The Family (2d term) . . . . .	2
Early and Mediæval Church History . . . . .	4

## Third Year

Comparative Jurisprudence . . . . .	2
International Law . . . . .	2
Criminal Law . . . . .	2
International Private Law . . . . .	1
Law of Municipal Corporations (1st term) . . . . .	2
Law of Taxation (2d term) . . . . .	2
Statistics, Methods, and Results . . . . .	2
Pauperism and Poor Relief (1st term) . . . . .	2
Crime and Penology (2d term) . . . . .	2
Socialism . . . . .	2
Ethnology (2d term) . . . . .	2
Railroad Problems . . . . .	2
History of United States, 1860-1877 (2d term) . . . . .	2
Rise and Growth of the French Monarchy (2d term) . . . . .	2
Modern and American Church History . . . . .	4
Municipal Politics (2d term) . . . . .	2

## REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Political Science ; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

(Addresses other than those in New York City are enclosed in parentheses.)

### UNIVERSITY STUDENTS.

NAME	RESIDENCE	CITY ADDRESS
Benjamin William Arnett	<i>Wilberforce, O.</i>	155 West 53d st.
	Wilberforce University, A.B., 1886. University Scholar in Education. Philosophy, <i>Sociology and Statistics.</i>	
Charles O. Baese	<i>New York City</i>	93 Second ave.
	University of New York, B.S., 1892 ; LL.B., 1893. <i>Administrative Law, Political Economy and Finance, Sociology and Statistics.</i>	
David Prescott Barrows	<i>Claremont, Cal.</i>	325 West 52d st.
	University of California, A.B., 1894 ; A.M., 1895. <i>Constitutional Law, Administrative Law, History.</i>	
Ernest Merrill Bartlett	<i>Newport, N. H.</i>	41 East 69th st.
	Amherst College, A.B., 1894. Student in Union Theological Seminary. Philosophy, <i>Sociology and Statistics.</i>	
Arthur Russell Bauder	<i>Cleveland, O.</i>	432 West 57th st.
	Case School of Applied Science, B.S., 1889. Pure Science, <i>International Law.</i>	
Wayland Lewis Beers	<i>Montana, N. Y.</i>	41 East 69th st.
	Brown University, A.B., 1895. Student in Union Theological Seminary. <i>Sociology and Statistics.</i>	
George Gulick Bradley	<i>New York City</i>	28 East 47th st.
	<i>Political Economy and Finance.</i>	
Ralph Lionel Brydges	<i>Islip, N. Y.</i>	
	Philosophy, <i>European History.</i>	
Hanford Montrose Burr	<i>Springfield, Mass.</i>	160 East 46th st.
	Amherst College, A.B. <i>Political Economy and Finance, Sociology and Statistics, Political Philosophy.</i>	
Henry Smith Chapman	<i>Brunswick, Me.</i>	51 East 21st st.
	Bowdoin College, A.B. <i>American and European History, Constitutional Law.</i>	
Horace Mann Conaway	<i>Athens, O.</i>	150 East 133d st.
	Ohio University, A.B., 1888 ; A.M., 1892. University Scholar in History. <i>American and European History, Political Economy and Finance.</i>	

NAME	RESIDENCE	CITY ADDRESS
Frederick Merritt Corse	New York City	447 Lexington ave.
University of Vermont, A.B., 1888. Columbia College, A.M., 1892. <i>Political Economy and Finance, Constitutional History, Sociology and Statistics.</i>		
Schuyler Emerson Day	New York City	3 West 53d st.
Columbia College, A.B., 1895. <i>Political Economy and Finance, Criminal Law, American History.</i>		
Albert Frost Earnshaw	Lowville, N. Y.	41 East 69th st.
Princeton College, A.B., 1892. Student in Union Theological Seminary. <i>Philosophy, Sociology and Statistics.</i>		
John Lovejoy Elliott	New York City	669 Madison ave.
University of Halle, Ph.D. <i>Sociology and Statistics, Constitutional Law.</i>		
William Sanford Evans	New York City	669 Madison ave.
Columbia College, A.B., 1895. <i>Sociology and Statistics, Political Economy and Finance, Constitutional History.</i>		
George Hooper Ferris	New York City	163 East 71st st.
Brown University, A.B., 1891; A.M., 1893. Student in Union Theological Seminary. <i>Philosophy, Sociology and Statistics.</i>		
Alexander Clarence Flick	Westerville, O.	447 Lexington ave.
Otterbein University, A.B., 1894. University Fellow in History. <i>American and European History, Sociology and Statistics.</i>		
Edward Morton Flinn	Des Moines, Iowa	50 East 70th st.
Student in Union Theological Seminary. <i>Sociology and Statistics.</i>		
Charles Andrew Frasure	Sherburne, N. Y.	41 East 69th st.
Hamilton College, A.B., 1894. Student in Union Theological Seminary. <i>Sociology and Statistics.</i>		
Mgrditch Simbad Gabriel	Central Turkey	202 West 23d st.
Central Turkey College, M.D., 1881. <i>Political Economy and Finance, Sociology and Statistics, European History.</i>		
William Oscar Gennert	Greenville, N. Y.	24 and 26 East 13th st.
Columbia College, A.B., 1895. University Scholar in Political Science. <i>Constitutional Law, Administrative Law, Political Philosophy.</i>		
Theodore Arthur Gessler	New York City	719 St. Nicholas ave.
University of the City of New York, A.B., 1894. Student in Union Theological Seminary. <i>Philosophy, European History.</i>		
Albert Stratton Gilbert	Palmyra, Wis.	49 East 69th st.
Lawrence University, A.B., 1895. Student in Union Theological Seminary. <i>Philosophy, Sociology and Statistics.</i>		
Frederick Christopher Grant	Plainfield, N. Y.	
Rutgers College, A.B., 1894. <i>Philosophy, Sociology and Statistics.</i>		
Frederick Smith Hall	Montclair, N. Y.	
Wesleyan University, A.B., 1893. University Scholar in Economics. Student in Union Theological Seminary. <i>Political Economy and Finance, European History, Sociology and Statistics, Philosophy.</i>		

NAME	RESIDENCE	CITY ADDRESS
Frederick Berg Hartranft	<i>Hartford, Conn.</i>	8 West 66th st.
Columbia College, A.B., 1895. <i>Political Economy and Finance, Sociology and Statistics, Comparative Constitutional Law.</i>		
Henry Budelman Heylman	<i>New York City</i>	561 Buckhout st.
College of the City of New York, A.B., 1894. <i>Constitutional Law, Roman Law and Comparative Jurisprudence, Administrative Law.</i>		
William Henry Hirsh	<i>New York City</i>	265 West 21st st.
College of the City of New York, A.B., 1894. Columbia College, A.M., 1895. <i>American and European History, Political Economy and Finance.</i>		
William Trumbull Holmes	<i>Montclair, N. J.</i>	41 East 69th st.
Harvard University, A.B., 1894. Student in Union Theological Seminary. <i>Sociology and Statistics.</i>		
Hamilton Holt	<i>New York City</i>	130 Fulton st.
Yale University, A.B. <i>Sociology and Statistics, Political Economy and Finance, Constitutional Law.</i>		
Francis William Howard	<i>Columbus, O.</i>	415 West 59th st.
Niagara University, A.B., 1887. University Fellow in Sociology. <i>Sociology and Statistics, Political Economy and Finance, Political Philosophy.</i>		
Edward Lawrence Hunt	<i>New York City</i>	129 Lexington ave.
Toronto University, A.B., 1889. Student in Union Theological Seminary. <i>Sociology and Statistics, Political Economy and Finance, Ecclesiastical History.</i>		
Chalmers Kilbourne	<i>Ferris, Texas</i>	41 East 69th st.
Trinity University, Texas, A.B., 1893; Cumberland University, B.D., 1895. Student in Union Theological Seminary. <i>Philosophy, Sociology and Statistics.</i>		
Arthur Kline Kuhn	<i>New York City</i>	32 West 84th st.
Columbia College, A.B., 1895. <i>Constitutional Law, Administrative Law, Political Economy and Finance.</i>		
Charles Kuntze	<i>Switzerland</i>	324 Madison st.
<i>Sociology and Statistics, Philosophy.</i>		
Walter Laidlaw	<i>New York City</i>	416 West 54th st.
University of Toronto, A.B., 1881; A.M., 1886. Princeton Theological Seminary, 1884. Student in Union Theological Seminary. <i>Sociology and Statistics, Political Economy and Finance.</i>		
Elliott Woodbury Lamson	<i>Hamilton, Mass.</i>	139 East 48th st.
Brown University, A.B., 1893; Cornell University, A.M., 1894. University Scholar in Political Philosophy. <i>Political Philosophy, Sociology and Statistics, Philosophy.</i>		
William David Landis	<i>Waverley, Tenn.</i>	41 East 66th st.
Cumberland University, A.B., 1895; B.D., 1895. Student in Union Theological Seminary. <i>Philosophy, Sociology and Statistics.</i>		
Marion Law	<i>New York City</i>	41 East 69th st.
University of Denver, B.S., 1891; A.B., 1892. Student in Union Theological Seminary. <i>Sociology and Statistics.</i>		
Wilfrid Lay	<i>New Rochelle, N. Y.</i>	(71 Willow Drive)
Columbia College, A.B., 1893. University Scholar in Psychology. <i>Philosophy, Sociology and Statistics.</i>		



NAME	RESIDENCE	CITY ADDRESS
Ralph Griffith Levering	<i>Maryland, Tenn.</i>	
Maryville College, B.L., 1895. University Scholar in Public Law. <i>Constitutional Law, American History, Political Economy and Finance.</i>		
Frederic Ludlow Luqueer	<i>Brooklyn, N. Y.</i>	(959 Kent ave.)
Columbia College, A.B., 1894. University Fellow in Education. <i>Philosophy, Sociology and Statistics.</i>		
Alexander Rice McKim	<i>New York City</i>	106 East 23d st.
Massachusetts Institute of Technology, B.S., 1886. <i>Mines, Political Economy and Finance.</i>		
Francis Herbert McLean	<i>Oakland, Cal.</i>	26 DeLancey st.
University of California, A.B., 1892. <i>Political Economy and Finance, Sociology and Statistics, History.</i>		
Simon James McLean	<i>Rosemont, Ontario</i>	675 Lexington ave.
Toronto University, A.B., 1894; LL.B., 1895. University Fellow in Political Economy. <i>Political Economy and Finance, American History, Political Philosophy, Constitutional Law, Sociology and Statistics, Philosophy.</i>		
Henry Lydon McMillan	<i>Princeton, N. J.</i>	354 West 56th st.
Princeton College. <i>Pure Science, Political Economy and Finance.</i>		
John Angus MacVannel	<i>St. Mary's, Ontario</i>	601 Lexington ave.
Toronto University, A.B., 1893; A.M., 1895. University Fellow in Philosophy. <i>Philosophy, Sociology and Statistics.</i>		
Milo Roy Maltbie	<i>Hinckley, Ill.</i>	626 Lexington ave.
Upper Iowa University, Ph.B., 1892. Northwestern University, Ph.M., 1893. University Fellow in Administrative Law. <i>Administrative Law, Constitutional Law, Sociology and Statistics.</i>		
Arba John Marsh	<i>Keuka College, N. Y.</i>	50 East 70th st.
Bates College, Lewistown, Me., A.B., 1894. Student in Union Theological Seminary. <i>Sociology and Statistics, Philosophy.</i>		
Walter Taylor Marvin	<i>New York City</i>	64 East 49th st.
Columbia College, A.B., 1893. <i>Philosophy; Sociology and Statistics.</i>		
Bryon Collins Mathews	<i>Newark, N. J.</i>	
Syracuse University, A.B., 1877; A.M., 1891; Ph.D., 1893. <i>Sociology and Statistics.</i>		
Gideomo Cantarella Maugeri	<i>Italy</i>	41 East 69th st.
Student in Union Theological Seminary. <i>Sociology and Statistics.</i>		
Newton D. Mereness	<i>Sharon, Wis.</i>	137 East 50th st.
University of Michigan, A.B., 1892; A.M., 1894. University Scholar in History. <i>European History, American History, Sociology and Statistics.</i>		
James D. Merriman	<i>Litchfield, Me.</i>	860 Lexington ave.
Bowdoin College, A.B., A.M. <i>Political Economy and Finance, Sociology and Statistics, Constitutional History.</i>		
James E. Mitchell	<i>Breckenridge, Mich.</i>	223 East 48th st.
Alma College, Ph.B., 1893. <i>American History, European History, Philosophy.</i>		

NAME	RESIDENCE	CITY ADDRESS
Joseph Sakumoshin Motoda	<i>Kurume, Japan</i>	401 West 23d st.
Kenyon College, A.B., 1891. Philadelphia Divinity School, A.M., 1893. University of Pennsylvania, Ph.D., 1895. <i>Sociology and Statistics, Philosophy.</i>		
George Demetrius Nicholas	<i>Smyrna, Asia Minor</i>	41 East 69th st.
Smyrna, Asia Minor, A.B., 1877. Student in Union Theological Seminary. <i>Philosophy; Ecclesiastical History.</i>		
Frank Henry Sparks Noble	<i>Casey, Iowa</i>	220 East 50th st.
Des Moines College, Iowa, A.B., 1892. State University of Iowa, A.M., 1894; LL.B., 1894. University Scholar in Finance. <i>Political Economy and Finance, Sociology and Statistics.</i>		
Milton James Norton	<i>Oberlin, O.</i>	41 East 69th st.
Oberlin College, A.B., 1894. Student in Union Theological Seminary. <i>Sociology and Statistics, Philosophy.</i>		
Takeo Noya	<i>Wakamatsee, Aizu, Japan</i>	41 East 69th st.
Franklin College, A.B., 1890; Marshal College, A.M., 1893. Student in Union Theological Seminary. <i>Philosophy, Sociology and Statistics.</i>		
Chozo Ouchi	<i>Fukuoka, Japan</i>	534 East 164th st.
Sen Shu Qua College, B.D., 1893. <i>European History, American History, Political Philosophy.</i>		
Joseph Daniel Peters	<i>Hanover, Pa.</i>	41 East 69th st.
North Western College, A.B., 1886. Student in Union Theological Seminary. <i>Political Philosophy, Philosophy.</i>		
Charles Paul Ernest Peugnet	<i>New York City</i>	231 West 45th st.
Columbia College, C.E., 1895. <i>Mines, American History.</i>		
Warren Waverly Phelan	<i>Brooklyn, N. Y.</i>	(108 South 5th st.)
Columbia College, A.B., 1894. University Scholar in Comparative Jurisprudence. <i>Roman Law and Comparative Jurisprudence, International Law, Sociology and Statistics.</i>		
Henry Berry Pogson	<i>New York City</i>	2020 Vyse ave.
Columbia College, A.B., 1895. <i>American History, European History, Political Economy, and Finance.</i>		
Arthur Augustus Powers	<i>New York City</i>	9 West 87th st.
<i>European History, American History, Sociology and Statistics, Political Economy and Finance, Philosophy.</i>		
Nathaniel Miller Pratt	<i>Montpelier, Vt.</i>	41 East 69th st.
University of Vermont, A.B., 1893. Student in Union Theological Seminary. <i>Philosophy, Sociology and Statistics.</i>		
James Henry Rankin	<i>Minneapolis, Minn.</i>	41 East 69th st.
University of Minnesota, 1892-93. Student in Union Theological Seminary. <i>Philosophy, Political Economy and Finance.</i>		
James Bronson Reynolds	<i>New York City</i>	26 Delancey st.
Yale University, A.B., 1884, B.L., 1888. <i>Sociology and Statistics, Political Economy and Finance.</i>		
Samuel Willard Richardson	<i>Painesville, O.</i>	41 East 69th st.
Brown University, A.B., 1894. Student in Union Theological Seminary. <i>Philosophy, Sociology and Statistics.</i>		

NAME	RESIDENCE	CITY ADDRESS
Charles Tomlinson Rittenhouse	<i>New York City</i>	247 West 138th st.
Stevens Institute of Technology, E.M., 1893.		
Columbia College, E.E., 1894; A.M., 1895. University Fellow in Electricity.		
Pure Science, <i>European History</i> .		
Frederick William Sanders	<i>New York City</i>	71 East 85th st.
College of the City of New York, Harvard University, A.B., 1883; A.M., 1892.		
University of Chicago, Ph.D., 1895. University Fellow in Sociology.		
<i>Sociology and Statistics, Political Economy and Finance, Public Law and Comparative Jurisprudence, Philosophy.</i>		
Charles Grenville Sewall	<i>Schenectady, N. Y.</i>	41 East 69th st.
Williams College, A.B., 1893. Student in Union Theological Seminary.		
Philosophy, <i>Sociology and Statistics.</i>		
Frank Robert Shepard	<i>Ashville, N. C.</i>	41 East 69th st.
Trinity College, N. C., A.B., 1893. Student in Union Theological Seminary.		
Philosophy, <i>Sociology and Statistics.</i>		
James Dickinson Simmons	<i>Hagerstown, Md.</i>	41 East 69th st.
Lafayette College, A.B., 1893. Student in Union Theological Seminary.		
Philosophy, <i>Sociology and Statistics.</i>		
Herman Simpson	<i>New York City</i>	312 Madison st.
University of the City of New York, A.B., 1894. University Scholar in Sociology.		
<i>Sociology and Statistics, Political Economy and Finance, European Legal History, Philosophy.</i>		
Gerald Birney Smith	<i>Middlefield, Mass.</i>	222 East 85th st.
Brown University, A.B., 1891. Student in Union Theological Seminary.		
<i>Sociology and Statistics.</i>		
James Franklin Smith	<i>Eaton, Tenn.</i>	41 East 69th st.
Bethel College, A.B., 1892; Cumberland University, B.D., 1893.		
Student in Union Theological Seminary.		
Philosophy, <i>Sociology and Statistics, Ecclesiastical History.</i>		
Percy Hilton Smith	<i>Atlanta, Ga.</i>	21 West 60th st.
Alabama Polytechnic Institute, B.S., 1895.		
Pure Science, <i>American History.</i>		
Francis Campbell Steinmetz	<i>Philadelphia, Pa.</i>	175 Ninth ave.
St. Stephen's College, A. B., 1893.		
<i>Sociology and Statistics.</i>		
Edward Emerson St. John	<i>Salem, Ind.</i>	41 East 69th st.
Wabash College, A.B., 1890; A.M., 1893. Student in Union Theological Seminary.		
Philosophy, <i>Ecclesiastical History.</i>		
William Dana Street	<i>Brooklyn, N. Y.</i>	(173 Macon st.)
Columbia College, A.B., 1895. Student in Union Theological Seminary.		
<i>Sociology and Statistics.</i>		
Shiroshi Tada	<i>Tokio, Japan</i>	41 East 69th st.
Meije Gakuin, Tokio. Student in Union Theological Seminary.		
Philosophy, <i>Sociology and Statistics, Political Economy and Finance.</i>		
Stephen Louis Testa	<i>New York City</i>	41 East 69th st.
Student in Union Theological Seminary.		
<i>Sociology and Statistics, Socialism.</i>		
William Otis Thomas	<i>Des Moines, Iowa</i>	50 East 70th st.
Iowa Business College. Student in Union Theological Seminary.		
<i>Sociology and Statistics.</i>		

NAME	RESIDENCE	CITY ADDRESS
Charles Henry Topping	<i>Minneapolis, Minn.</i>	41 East 69th st.
University of Minnesota, B.S., 1894. Student in Union Theological Seminary. <i>Sociology and Statistics</i> , Philosophy.		
Walter Shepard Ufford	<i>New York City</i>	208 West 34th st.
Amherst College, A.B., 1882. University Fellow in Sociology. <i>Sociology and Statistics</i> , <i>Political Philosophy</i> , Philosophy.		
Henry Gustavus Vick	<i>Grafton, N. D.</i>	260 West 54th st.
University of North Dakota, A.B., 1893. <i>Political Economy and Finance</i> , <i>Sociology and Statistics</i> , <i>Administrative Law</i> , Philosophy.		
Ernest Louis Walz, Jr.	<i>Plainfield, N. J.</i>	700 Park ave.
Student in Union Theological Seminary. Philosophy, <i>Sociology and Statistics</i> .		
Edward Henry Warren	<i>New York City</i>	University Heights
Harvard, A.B., 1895. University Scholar in Sociology. <i>Sociology and Statistics</i> , <i>Political Economy and Finance</i> , <i>American History</i> .		
Henry L. Weil	<i>New York City</i>	42 West 70th st.
<i>American and European History</i> , Philosophy.		
Milton Weil	<i>New York City</i>	35 West 74th st.
<i>American and European History</i> , <i>Constitutional Law</i> , <i>International Law</i> .		
Theodore Greely White	<i>New York City</i>	39 West 26th st.
Columbia College, Ph.B., 1894 ; A.M., 1895. <i>Pure Science</i> , <i>American and European History</i> .		
Delos Franklin Wilcox	<i>Rainville, Mich.</i>	302 West 45th st.
University of Michigan, A.B., 1894 ; A.M., 1895. University Fellow in Administrative Law. <i>Administrative Law</i> , <i>Sociology and Statistics</i> , <i>Constitutional Law</i> .		
Joseph Alexander Wright	<i>New York City</i>	601 Lexington ave.
De Pauw University, Ph.B., 1894. University Fellow in Comparative Jurisprudence. <i>Comparative Jurisprudence</i> , <i>Administrative Law</i> , <i>Political Economy and Finance</i> .		
Total.....		96

#### STUDENTS IN THE SCHOOL OF ARTS PURSUING COURSES OF INSTRUCTION IN THE DEPARTMENTS SPECIFIED.

NAME	RESIDENCE	CITY ADDRESS
Charles Siedler Adams	<i>Brooklyn, N. Y.</i>	(203 Hancock st.)
<i>Political Economy</i> , <i>History</i> .		
Bernard Alexander	<i>New York City</i>	105 East 96th st.
<i>Criminal Law</i> .		
John Richard Atwill	<i>Kansas City, Mo.</i>	238 West 11th st.
<i>History</i> , <i>Political Economy</i> .		
Rogers Hammond Bacon	<i>New York City</i>	29 East 23th st.
<i>History of Political Theories</i> .		
Edwin Atkinson Bayles	<i>Orange, N. J.</i>	(408 Main st.)
<i>History</i> , <i>Political Economy</i> .		

NAME	RESIDENCE	CITY ADDRESS
Nathan Isaac Bijur <i>History, Political Economy.</i>	<i>New York City</i>	46 East 73d st.
George Philip Bryant <i>Political Economy, History.</i>	<i>New York City</i>	140 West 15th st.
Granville Ingraham Burr <i>Criminal Law.</i>	<i>New York City</i>	513 West 144th st.
Herbert Louis Celler <i>History.</i>	<i>New York City</i>	61 West 94th st.
David Cohn <i>Criminal Law, History.</i>	<i>Paterson, N. J.</i>	(83 Auburn st.)
Maurice Cohn <i>Criminal Law, History.</i>	<i>Paterson, N. J.</i>	(83 Auburn st.)
Charles du Pont Coudert <i>Criminal Law, Taxation, Finance.</i>	<i>Tuxedo, N. Y.</i>	70 William st.
Edward Hamilton Daly <i>Criminal Law, History.</i>	<i>New York City</i>	19 East 62d st.
Ernest Warren Davenport <i>History of Political Theories.</i>	<i>Yonkers, N. Y.</i>	
Walter Scott Dryfoos <i>History.</i>	<i>New York City</i>	22 West 69th st.
Henry Louis Fick <i>Political Economy, History, Anthropology.</i>	<i>New York City</i>	44 Sixth ave.
Wells Hubert Fitch <i>History.</i>	<i>Brooklyn, N. Y.</i>	(374 Herkimer st.)
Victor William Hungerford <i>Criminal Law.</i>	<i>New York City</i>	121 West 69th st.
Edward Thomas Johnston <i>Criminal Law.</i>	<i>Newtown, N. Y.</i>	353 Third ave.
Charles Henry Ketcham <i>Criminal Law.</i>	<i>Yonkers, N. Y.</i>	
Alfred Louis Kroeber <i>History.</i>	<i>New York City</i>	316 West 89th st.
Irving Lehman <i>Criminal Law, History.</i>	<i>New York City</i>	5 East 62d st.
Albert Ralph Lesinsky <i>History.</i>	<i>New York City</i>	25 East 72d st.
Frederick Montgomery Livingston <i>Criminal Law, History.</i>	<i>Brooklyn, N. Y.</i>	(370 Greene ave.)
Robert Glenn McCrea <i>Political Economy, History.</i>	<i>Brooklyn, N. Y.</i>	(533 Franklin ave.)
Leonard Jerome Obermeier <i>Criminal Law, History, Political Economy.</i>	<i>New York City</i>	220 East 48th st.
Frederick Augustus Peters <i>Anthropology.</i>	<i>New York City</i>	1046 Stebbins ave.
Joseph Myer Proskauer <i>History.</i>	<i>Mobile, Ala.</i>	116 West 136th st.



NAME	RESIDENCE	CITY ADDRESS
Franklin Edwin Reese <i>Criminal Law, History.</i>	<i>Westfield, N. J.</i>	
Allan Conn Rowe <i>Criminal Law, Political Economy.</i>	<i>Brooklyn, N. Y.</i>	(550 Washington ave.)
John Wiethauper Russell <i>History.</i>	<i>New York City</i>	1965 Seventh ave.
Herman Francis Senftner <i>Political Economy.</i>	<i>New York City</i>	108 West 136th st.
Samuel Swayze Seward, Jr. <i>Political Economy.</i>	<i>New York City</i>	113 West 85th st.
Walter Connell Shoup <i>History, Political Economy.</i>	<i>New York City</i>	120 West 82d st.
John Hebard Snyder <i>History.</i>	<i>West Hoboken, N. J.</i>	
Richard Weil <i>Anthropology.</i>	<i>New York City</i>	109 West 77th st.
Edwin Blanchard Woodruff <i>Anthropology.</i>	<i>Delhi, N. Y.</i>	244 West 42d st.
Total.....		37

CANDIDATES FOR THE DEGREE OF LL.B. TAKING PART OF  
THEIR STUDIES UNDER THIS FACULTY.

Alexander Spear Andrews Princeton College, A.B., 1895. <i>Criminal Law.</i>	<i>Washington, D.C.</i>	140 West 57th st.
Holcombe Bacon University of Georgia. <i>Criminal Law.</i>	<i>Savannah, Ga.</i>	24 East 47th st.
William Anthony Baker <i>Criminal Law.</i>	<i>Little Falls, N. Y.</i>	251 West 55th st.
Wilbur Laing Ball University of Wisconsin, A.B., 1895. <i>Criminal Law.</i>	<i>Portsmouth, O.</i>	63 West 51st st.
George Ezra Batcheller Yale University, A.B., 1895. <i>Criminal Law.</i>	<i>Boston, Mass.</i>	37 Fifth ave.
Wyllys Pomeroy Baxter Columbia College, School of Mines. <i>Criminal Law.</i>	<i>New York City</i>	Montclair, N. J.
Anson McCook Beard Yale University, A.B., 1895. <i>Criminal Law.</i>	<i>Richmond, Va.</i>	Madison Avenue Hotel
Marx Morton Bechhold Harvard University, A.B., 1895. <i>Criminal Law.</i>	<i>Hemon, N. Y.</i>	100 East 71st st.
Clinton Edward Bell Amherst College, A.B., 1895. <i>Criminal Law.</i>	<i>Southampton, L. I.</i>	East Side House, foot of 76th st.

NAME	RESIDENCE	CITY ADDRESS
David C. Bennett, Jr. Polytechnic Institute of Brooklyn, A.B., 1895. <i>Criminal Law.</i>	<i>Bay Ridge, L. I.</i>	79th st. and Fourth ave., Brooklyn
Hermann A. Bolte Gymnasium, Germany. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	18 East 109th st.
Oscar Rutherford Brandt College of the City of New York. <i>Criminal Law.</i>	<i>New York City</i>	Marble Hill, Kingsbridge, N. Y. C.
John Hull Brewster, Jr. Williams College. <i>Criminal Law.</i>	<i>Rochester, N. Y.</i>	Hotel Martin
Dudley Bliss Buell <i>Criminal Law.</i>	<i>Milwaukee, Wis.</i>	45 West 55th st.
Russell Ely Burke Columbia College, A.B. <i>International Private Law.</i>	<i>New York City</i>	17 East 55th st.
Frederick Rhodes Burrows Adelbert College, Ph.B., 1894. <i>Criminal Law.</i>	<i>Hickory, Pa.</i>	150 East 53d st.
Louis W. Burrows Adelbert College. <i>Criminal Law.</i>	<i>Hickory, Pa.</i>	150 East 53d st.
Mortimer Wardler Byers Adelphi Academy. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(73 Herkimer st.)
Benjamin H. Cable Yale University, A.B., 1895. <i>Criminal Law.</i>	<i>Rock Island, Ill.</i>	22 West 34th st.
Alonzo R. Campbell <i>Criminal Law.</i>	<i>Independence, Iowa</i>	344 West 51st st.
John Francis Carew Columbia College, A.B. <i>History of Political Theories, International Private Law.</i>	<i>New York City</i>	225 East 58th st.
Walter Frederick Carter Yale University, A.B., 1895. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(176 Brooklyn ave.)
Thomas Ives Chatfield Yale University, A.B. <i>International Law.</i>	<i>New York City</i>	173 Fifth ave.
Charles Bishop Chisholm Bozeman Agricultural College. <i>Criminal Law.</i>	<i>Bozeman, Mont.</i>	47 East 21st st.
Bayard Church <i>Criminal Law.</i>	<i>Dedham, Mass.</i>	78 Warburton ave., Yonkers, N. Y.
Herbert Lawton Coffin Friends Seminary, N. Y. <i>Criminal Law.</i>	<i>Athens, N. Y.</i>	142 East 18th st.

NAME	RESIDENCE	CITY ADDRESS
Isidore Cohn <i>Criminal Law.</i>	<i>Buffalo, N. Y.</i>	250 East 60th st.
Bernard Milton Cone Johns Hopkins University, A.B. <i>Constitutional Law, International Law, Roman Law, American History.</i>	<i>Baltimore, Md.</i>	116 West 74th st.
Walter Evans Cooke Yale University, A.B., 1895. <i>Criminal Law.</i>	<i>Paterson, N. J.</i>	(437 Ellison st.)
Alford W. Cooley Harvard University, A.B., 1895. <i>Criminal Law.</i>	<i>Westchester, N. Y.</i>	
Joseph Jacob Corn <i>International Private Law.</i>	<i>New York City</i>	23 East 128th st.
Abraham Harrison Cornish Harvard University, A.B., 1895. <i>Criminal Law.</i>	<i>Gillette, N. J.</i>	275 Vanderbilt ave., Brooklyn
Richmond Raymond Costello Manhattan College, A.B., 1895. <i>Criminal Law.</i>	<i>New York City</i>	129 East 71st st.
Joseph Mory Daggett Columbia College, one year. <i>Criminal Law.</i>	<i>Chicago, Ill.</i>	1296 Madison ave.
David Theodore Davis McGill University, A.B., 1894. <i>Criminal Law.</i>	<i>Montréal, Canada</i>	15 East 62d st.
Schuyler Emerson Day Columbia College, A.B. <i>Political Economy, Criminal Law, American History.</i>	<i>New York City</i>	3 West 53d st.
Frank Henry Deal Albany Law School. <i>Criminal Law, American History.</i>	<i>Troy, N. Y.</i>	150 East 53d st.
George Edmond De Braekeleer <i>Criminal Law.</i>	<i>New York City</i>	121 West 80th st.
Eugene Willis Denton Columbia College, two years. <i>Criminal Law, History.</i>	<i>New Hyde Park, N. Y.</i>	
Ewing L. Deputy <i>Municipal Corporations.</i>	<i>Portsmouth, O.</i>	106 East 55th st.
Percy F. Dickey <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	340 West 56th st.
Harrie Renz Dingwall Trinity College, B.S., 1895. <i>Criminal Law.</i>	<i>Detroit, Mich.</i>	202 West 44th st.
Maurice Edgars Doran St. John's College, Fordham, A.B., 1895. <i>Criminal Law.</i>	<i>Le Sueur, Minn.</i>	44 West 46th st.
Michael Doran, Jr. St. John's College, Fordham, A.B., 1894. <i>Criminal Law.</i>	<i>Le Sueur, Minn.</i>	44 West 46th st.

NAME	RESIDENCE	CITY ADDRESS
John Giblon Duffy <i>Criminal Law.</i>	<i>New York City</i>	120 West 22d st.
Robert Laurie Eaton Pingry School, Elizabeth, N. J. <i>Criminal Law.</i>	<i>Elizabeth, N. J.</i>	(1141 East Jersey st.)
Charles F. Eberle <i>Criminal Law.</i>	<i>Chatham, N. Y.</i>	224 Lexington ave.
Henry William Egner, Jr. Columbia College, A.B., 1895. <i>Criminal Law.</i>	<i>Orange, N. J.</i>	(1015 Broad st., Newark, N. J.)
Oscar Weeks Ehrhorn College of the City of New York, A.B., 1895. <i>Criminal Law, American History, European History, Political Economy and Finance.</i>	<i>New York City</i>	215 Ninth ave.
Jesse William Ehrlich College of the City of New York, A.B. <i>Constitutional Law.</i>	<i>New York City</i>	54 West 75th st.
Benjamin Franklin Einbighler <i>Criminal Law.</i>	<i>New York City</i>	687 Amsterdam ave.
Horatio Seymour Eisman College of the City of New York, A.B. Columbia College, A.M. <i>International Private Law.</i>	<i>New York City</i>	124 East 74th st
Jerome Eisner College of the City of New York, B.S., 1895. <i>Criminal Law.</i>	<i>New York City</i>	158 East 72d st
Hyman B. Elias College of the City of New York, A.B., 1895. <i>Criminal Law.</i>	<i>New York City</i>	95 East 7th st.
Richard Astor Elliott <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	244 West 72d st.
Franklin Elmore Yale University, A.B., 1895. <i>Criminal Law.</i>	<i>Troy, N. Y.</i>	432 Madison ave.
Harry Louis Falk <i>Criminal Law.</i>	<i>Decatur, Ala.</i>	117 East 60th st.
Edward James Farley Manhattan College, A.B., 1895. <i>Criminal Law.</i>	<i>New York City</i>	10 West 84th st.
Joseph Lea Fearing <i>Criminal Law.</i>	<i>Philadelphia, Pa.</i>	7 East 43d st.
Edward R. Finch Yale University, A.B., 1895. <i>Criminal Law.</i>	<i>Plainfield, N. J.</i>	60 East 49th st.
John Harding Fisher St. John's College, Fordham, A.B., 1895. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	Decatur ave., Bedford Park, N. Y. C.
Charles Louis Fleming, Jr. Harvard College. <i>Criminal Law.</i>	<i>New York City</i>	845 St. Nicholas ave.

NAME	RESIDENCE	CITY ADDRESS
Alexander Aberdeen Forman, Jr. <i>Criminal Law.</i>	<i>Hillside, Mich.</i>	573 St. Mark's ave., Brooklyn, N. Y.
Frederic Wellington Forsyth Lincoln University, B.L., 1892. <i>Criminal Law.</i>	<i>Lincoln, Ill.</i>	157 West 46th st.
George Henry Dunton Foster Bowdoin College, A.B., 1895. <i>Criminal Law.</i>	<i>Westport, Me.</i>	Hotel Continental
David Joseph Fox College of the City of New York, B.S. <i>Constitutional Law, Roman Law.</i>	<i>New York City</i>	127 East 79th st.
George Hermann Friedman College of the City of New York, B.S. <i>International Private Law, Municipal Corporations, International Law, American History.</i>	<i>New York City</i>	922 East 138th st. Columbia College, A.M.
Joseph P. Friedman College of the City of New York, A.B., 1895. <i>Criminal Law, Taxation and Finance.</i>	<i>Austria</i>	32 Ridge st.
Joseph Whitney Ganson Harvard University, A.B. <i>Sociology.</i>	<i>New York City</i>	17 West 33d st.
Felix Mortimer Gernsheim Columbia College, A.B. <i>International Law, Constitutional Law.</i>	<i>New York City</i>	1 East 44th st.
Frederic Nye Gilbert <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(168 State st.)
Bernard Goldberg College of the City of New York. <i>Criminal Law.</i>	<i>New York City</i>	157 East 72d st.
Herbert Goldmark Brooklyn Polytechnic Institute, A.B., 1895. <i>Criminal Law.</i>	<i>New York City</i>	626 Greene ave., Brooklyn
George Selden Goodrich School of Mines. <i>Criminal Law.</i>	<i>Erie, Pa.</i>	416 Clinton ave., Brooklyn
Willard Hubbard Goodwin University of Rochester, Ph.B., 1895. <i>Criminal Law.</i>	<i>Kingston, Pa.</i>	Passaic, N. J.
Sharon Graham Upper Canada College, Toronto, five years. Harvard University, one session. <i>Criminal Law, American History.</i>	<i>Montreal, Canada</i>	850 Lexington ave. McGill University, three years.
Ralph Campbell Green <i>Criminal Law.</i>	<i>Sayville, N. Y.</i>	533 Lexington ave.
Daniel Eddy Griswold Williams College. <i>Criminal Law.</i>	<i>Waterbury, Conn.</i>	186 Lexington ave.
Arcule Edouard Guilmette University of Nebraska, A.B., 1883. <i>Criminal Law.</i>	<i>Assumption, Ill.</i>	141 East 53d st.



NAME	RESIDENCE	CITY ADDRESS
Sumner Hanauer Gymnasium, Frankfort, Germany. <i>Criminal Law.</i>	Philadelphia, Pa.	12 East 47th st.
Myron Harris <i>Criminal Law.</i>	Orange, N. J.	(39 Cleveland st.)
Morris Samuel Hart <i>Criminal Law.</i>	Charleston, S. C.	6 West 103d st.
Charles Edwin Heckler <i>Administrative Law, Municipal Corporations.</i>	Salem, O.	126 East 58th st.
Norman Swope Heindel Pennsylvania College, three years. <i>Criminal Law.</i>	Mount Carmel, Ill.	145 East 49th st.
Henry Grah Hershfield <i>Criminal Law.</i>	St. Louis, Mo.	41 East 67th st.
Otto Theodore Hess Columbia College, A.B. <i>International Private Law, International Law, History.</i>	New York City	307 West 86th st.
George Michael Heumann College of the City of New York. <i>Criminal Law.</i>	New York City	145 East 58th st.
Frederick Brackett Hill Harvard University, A.B., 1895. <i>Criminal Law.</i>	Chelsea, Mass.	355 West 145th st.
George Place Hill Harvard College. <i>Criminal Law.</i>	Niagara Falls, N. Y.	31 East 75th st.
Alexander Hirshberg <i>Criminal Law.</i>	Cambridge, O.	228 West 130th st.
James Fiske Hooker Yale University, A.B., 1895. <i>Criminal Law.</i>	New York City	Plaza Hotel
Richard M. Hotaling <i>Criminal Law.</i>	San Francisco, Cal.	148 West 43d st.
James Cox Howell Columbia College, A.B., 1894. <i>International Law, History.</i>	Jersey City, N. J.	Highland Mills, N. Y.
Frank Winfield Hubby Yale University, A.B., 1895. <i>Criminal Law, History.</i>	Cleveland, O.	153 East 36th st.
Francis Rader Hulick Lafayette College. West Point Military Academy. <i>Criminal Law.</i>	Easton, Pa.	6 East 47th st.
Renwick Clifton Hurry <i>Criminal Law.</i>	New York City	56 East 49th st.
Ralph Henry Johnson State University of Nebraska, A.B., 1894. <i>Administrative Law.</i>	Friend, Neb.	37 East 50th st.
Charles Joseph College of the City of New York. <i>Criminal Law, History, Political Philosophy, Political Economy and Finance.</i>	Montreal, Can.	314 East 116th st.

NAME	RESIDENCE	CITY ADDRESS
John D. Kaps <i>Criminal Law.</i>	<i>Portsmouth, O.</i>	237 East 32d st.
Gilbert Falconer Kennedy Harvard University, B.S., 1895. <i>Criminal Law.</i>	<i>Rondout, N. Y.</i>	26 West 50th st.
Gustavus T. Kirby Columbia College, E.E., 1895. <i>Criminal Law.</i>	<i>Philadelphia, Pa.</i>	158 West 45th st.
William R. A. Koehl North Windsor College, Md., A.B., 1895. <i>International Private Law, International Law, Municipal Corporations, History.</i>	<i>New York City</i>	578 Lexington ave.
Edward Lasker Yale University. <i>Criminal Law.</i>	<i>Galveston, Texas</i>	214 East 72d st.
James D. Layng, Jr. Yale University, Ph.B., 1895. <i>Criminal Law.</i>	<i>Alleghany City, Pa.</i>	931 Fifth ave.
Charles Shaw Leonard Highland University, Kansas, B.S., 1894. <i>Criminal Law, American History, European History.</i>	<i>Highland, Kansas</i>	10 East 47th st.
Adolf Mitchell Leslie College of the City of New York. Lycée Condorcet, Paris. Lycée Louis le Grand, Paris. <i>Criminal Law.</i>	<i>Odessa, Russia</i>	419 East 51st st.
Louis Levy College of the City of New York. A.B. <i>International Private Law.</i>	<i>New York City</i>	816 Lexington ave.
Walter Henry Liebmann Columbia College, A.B., 1894. <i>Comparative Constitutional Law.</i>	<i>Brooklyn, N. Y.</i>	42 East 72d st.
Edward Livingston, Jr. Harvard University, A.B., 1893. <i>International Law.</i>	<i>New York City</i>	17 East 74th st.
John Frederick Lockwood College of the City of New York. <i>Criminal Law.</i>	<i>New York City</i>	155th st. and Amsterdam ave.
Arthur Henry Longfellow Harvard University, A.B., 1895. <i>Criminal Law.</i>	<i>Boston, Mass.</i>	145 West 48th st.
Thomas Vincent Loughran Manhattan College, A.B., 1895. <i>Criminal Law.</i>	<i>New York City</i>	445 West 47th st.
Frank Amanda Lutz Kansas University, A.B., 1893. <i>Criminal Law.</i>	<i>Ottumwa, Iowa</i>	244 West 52d st.
Philip Mesier Lydig Harvard University, A.B. <i>Criminal Law.</i>	<i>New York City</i>	Clarendon Hotel

NAME	RESIDENCE	CITY ADDRESS
Charles Watson McCandless Oberlin College, Ph.B., 1894. <i>Criminal Law.</i>	<i>Mercer, Pa.</i>	360 West 58th st.
Charles Edward Francis McCann College St. Francis Xavier, Ph.B. <i>International Law.</i>	<i>New York City</i>	Hotel Lincoln
Hugh James McConn University of Notre Dame, Ind., Preparatory Department. <i>Criminal Law.</i>	<i>Fort Madison, Iowa</i>	
William Townsend McCoun Amherst Veterinary College, D.V.S. <i>Administrative Law, Constitutional Law.</i>	<i>Oyster Bay, L. I.</i>	37 East 50th st.
Cornelius Patrick McIntyre Spring Hill College, A.B. <i>International Private Law.</i>	<i>Montgomery, Ala.</i>	175 Lexington ave.
Leo Lawrence McLoughlin College St. Francis Xavier, A.B., 1895. <i>Criminal Law, Political Economy.</i>	<i>Jersey City, N. J.</i>	158 Waverly place
Malcolm Macdonald, Jr. Princeton College. <i>Criminal Law.</i>	<i>Camden, N. J.</i>	1 West 81st st.
S. Duncan Marshall, Jr. <i>Criminal Law.</i>	<i>Bartow-on-Sound, N. Y.</i>	
William Thomas Mason Columbia College, A.B. <i>Constitutional Law, International Law.</i>	<i>New York City</i>	37 West 48th st.
Robert Valentine Mathews Polytechnic Institute, Brooklyn, three years. <i>International Law, Municipal Corporations.</i>	<i>Brooklyn, N. Y.</i>	(222 Schermerhorn st.)
Herbert Louis May Cornell University, one year. <i>Criminal Law.</i>	<i>Philadelphia, Pa.</i>	150 East 60th st.
Sidney S. Meyers College of the City of New York, two years. <i>Criminal Law.</i>	<i>New Orleans, La.</i>	110 East 92d st.
Clark A. Miller Yale University, three years. <i>Criminal Law.</i>	<i>New Rochelle, N. Y.</i>	Plaza Hotel
Robert Chambers Minard Syracuse University, A.B., 1894. <i>Criminal Law.</i>	<i>Morristown, N. J.</i>	152 East 56th st.
Rocius Morse <i>Criminal Law.</i>	<i>Elmira, N. Y.</i>	366 West 55th st.
Eugene Joseph Murphy <i>Criminal Law.</i>	<i>Jersey City, N. J.</i>	(275 Central ave.)
Frederick Felix Neuman Columbia College, A.B. <i>International Law.</i>	<i>New York City</i>	604 Lexington ave.

NAME	RESIDENCE	CITY ADDRESS
Washington Romaine Nichols College St. Francis Xavier, four years. <i>Criminal Law.</i>	<i>New York City</i>	358 Lexington ave.
Sheridan Shook Norton College St. Francis Xavier, A.B., 1893; A.M., 1894. <i>International Law, Criminal Law.</i>	<i>New York City</i>	161 West 71st st.
James F. O'Beirne College St. Francis Xavier, A.B., 1893; A.M., 1894. <i>International Law, Municipal Corporations, History.</i>	<i>New York City</i>	201 East 20th st.
William T. O'Donnell Brown University, A.B., 1895. <i>Criminal Law.</i>	<i>Bristol, L. I.</i>	150 East 53d st.
Arthur Wellington Opp Adelphi Academy. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(181 Vernon ave.)
Porter Paddock Blackburn University, B.S., 1884. <i>Criminal Law.</i>	<i>Warren, Ill.</i>	62 East 127th st.
Edward Codman Parish Columbia College, four years. <i>Criminal Law.</i>	<i>Irvington, N. Y.</i>	1 West 19th st.
William Usher Parsons Yale University, Ph.B., 1895. <i>Criminal Law.</i>	<i>Kennebunk, Me.</i>	1033 Madison ave.
Benjamin Gerson Paskusz College of the City of New York, A.B., 1894. Columbia College, A.M., 1895. <i>Comparative Constitutional Law, International Law, American History Political Economy and Finance, Roman Law and Comparative Jurisprudence.</i>	<i>New York City</i>	242 East 72d st.
Harry Putnam Pearsons Northwestern University, A.B., 1895. <i>Criminal Law.</i>	<i>Evanston, Ill.</i>	68 West 48th st.
Henry Hollister Pearce Harvard University, A.B., 1891. <i>Criminal Law.</i>	<i>New York City</i>	22 West 43d st.
Charles Rogers Pelgram <i>International Law, International Private Law.</i>	<i>Paterson, N. J.</i>	337 West 88th st.
Edward W. Perry University of the South. <i>Criminal Law.</i>	<i>Pensacola, Fla.</i>	Westwood, N. J.
John J. Phelan Manhattan College, A.B., 1895. <i>Criminal Law, International Law.</i>	<i>New York City</i>	66 West 85th st.
Edward Loomis Phillips Grove City College, <i>Criminal Law.</i>	<i>North East, Pa.</i>	140 East 47th st.
Bertram Pittis <i>Criminal Law.</i>	<i>Plainfield, N. J.</i>	234 West 44th st.
Hugh R. Potts <i>Criminal Law.</i>	<i>New York City</i>	138 West 57th st.

NAME	RESIDENCE	CITY ADDRESS
James William Prendergast Mt. St. Mary's College, A.B., 1895. <i>Criminal Law.</i>	Brooklyn, N. Y.	(259 Clinton st.)
Edward Anson Prentice <i>Municipal Corporations.</i>	Portage, N. Y.	65 East 61st st.
Arthur M. Price <i>Constitutional Law.</i>	New York City	113 West 75th st.
Walter Buchanan Raymond <i>Criminal Law, Political Economy.</i>	Brooklyn, N. Y.	(106 Taylor st.)
William Aloysius Redden <i>Criminal Law, History of Political Philosophy, History of Political Theories.</i>	Bridgeport, Ct.	139 East 48th st.
Hughes T. Reynolds Harvard University one year. <i>Criminal Law.</i>	Cleveland, Tenn.	20 East 47th st.
Charles Elting Rickerson <i>Criminal Law.</i>	Brooklyn, N. Y.	(37 Eighth ave.)
William Combs Ridgway Phillips Academy, Andover, Mass., four years. <i>Criminal Law.</i>	Jersey City, N. J.	(18 Kensington ave.)
William Ringert <i>Criminal Law.</i>	Los Angeles, Cal.	117 West 46th st.
Clifford Charles Roberts <i>Criminal Law.</i>	New York City	72 West 94th st.
Stephen Bogert Roe Yale University, Ph.B., 1895. <i>Criminal Law.</i>	New York City	35 East 37th st.
Alfred Roelker, Jr. Amherst College, A.B., 1895. <i>Criminal Law, Political Economy and Finance, Taxation.</i>	New Brighton, S. I.	202 West 45th st.
William Perry Rogers Indiana University, LL.B., A.B. <i>Municipal Corporations, International Law, Constitutional Law.</i>	Bloomington, Ind.	302 West 45th st.
James Naumburg Rosenberg Columbia College, A.B., 1895. <i>Criminal Law.</i>	Alleghany City, Pa.	122 West 87th st.
George Ross <i>International Private Law.</i>	New York City	128 West 132d st.
John C. Rowe Harvard University, A.B., 1895. <i>Criminal Law.</i>	South Bethlehem, N. Y.	626 Lexington ave.
George Rubenstein <i>Criminal Law.</i>	Westerly, R. I.	112 East 80th st.
David Rumsey University of Rochester. <i>Criminal Law, History.</i>	Bath, N. Y.	34 West 36th st.
George E. Ruppert <i>Criminal Law.</i>	New York City	1116 Fifth ave.



NAME	RESIDENCE	CITY ADDRESS
Nathaniel R. Rutherford Milford College, four years. <i>Criminal Law.</i>	<i>Milford, Texas</i>	302 West 45th st.
Henry Salant University of the City of New York, Ph.B., 1895. <i>Criminal Law, Political Economy.</i>	<i>New York City</i>	348 East 78th st.
James Murray Sanderson Columbia College, LL.B., 1895. <i>International Law, Comparative Jurisprudence, Municipal Corporations, Law of Taxation, Political Economy and Finance, American History.</i>	<i>Newark, N. J.</i>	(584 High st.)
Henry Gansevoort Sanford Williams College, A.B., 1895. <i>Criminal Law.</i>	<i>Poughkeepsie, N. Y.</i>	Madison Avenue Hotel
T. W. Satterthwaite <i>Criminal Law.</i>	<i>Nutley, N. J.</i>	
Leo Schafran College of the City of New York, B.S., 1895. <i>Criminal Law.</i>	<i>Hornellsville, N. Y.</i>	1644 Madison ave.
George J. Schleicher <i>International Law, Municipal Corporations, European Legal History.</i>	<i>Cuero, Texas</i>	111 West 49th st.
Peter Schmuck College of the City of New York, B.S. Columbia College, A.M. <i>International Private Law, International Law.</i>	<i>New York City</i>	325 West 39th st.
Oscar Roland Seitz Columbia College, A.B. <i>International Private Law, History.</i>	<i>New York City</i>	150 West 120th st.
Samuel Adams Singerman <i>Criminal Law, History.</i>	<i>Cincinnati, O.</i>	344 West 48th st.
Thomas Bailey Slayden Harvard University, eight months. <i>Criminal Law.</i>	<i>St. Joseph, Mo.</i>	Hoffman House
Frank J. Smith University of Minnesota, three years. <i>Criminal Law.</i>	<i>Oconomowoc, Wis.</i>	149 East 47th st.
John P. Smith College of the City of New York, A.B., 1895. <i>Criminal Law.</i>	<i>New York City</i>	355 West 17th st.
Philip Sondheim <i>Criminal Law.</i>	<i>Buffalo, N. Y.</i>	346 East 50th st.
William Dick Sporborg Harvard University, three years. <i>Criminal Law.</i>	<i>Albany, N. Y.</i>	111 East 65th st.
Francis Raymond Stark College St. Francis Xavier, A.B., 1893; A.M., 1894. <i>International Law.</i>	<i>New York City</i>	30 West 51st st.
Benjamin Horace Stern University of the City of New York, Ph.B., 1895. <i>Criminal Law.</i>	<i>New York City</i>	133 East 80th st.

NAME	RESIDENCE	CITY ADDRESS
Harlan Fiske Stern Amherst College, B.S., 1894. <i>Criminal Law.</i>	<i>Chesterfield N. H.</i>	223 Cumberland st., Brooklyn, N. Y.
Robert William Stewart College of the City of New York, two years. <i>Criminal Law.</i>	<i>New York City</i>	123 West 11th st.
Ralph Alonzo Sturges Bates College A.B., 1893. <i>Criminal Law.</i>	<i>Lewiston, Me.</i>	77 East 55th st.
Lawrence Arnold Tanzer Harvard University, A.B. <i>Administrative Law.</i>	<i>New York City</i>	109 West 77th st.
Charles K. Terry Polytechnic Institute, Brooklyn. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(436 Clinton st.)
Jay L. Thompson Harvard University, A.B., 1895. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	24 West 85th st.
Robert William Thompson, Jr. Columbia College, A.M. <i>International Private Law, International Law, History.</i>	<i>New York City</i>	229 West 97th st.
Charles Herman Trask <i>Criminal Law.</i>	<i>Little Falls, N. Y.</i>	160 East 49th st.
Gerard Beekman Underhill <i>Criminal Law.</i>	<i>Clifton, S. I.</i>	101 West 81st st.
Ralph Underhill Polytechnic Institute, Brooklyn. <i>Criminal law.</i>	<i>Brooklyn, N. Y.</i>	(54 Eighth Ave.)
Henry Ayres Uterhart Columbia College, A.B. <i>International Law, History.</i>	<i>New York City</i>	552 East 85th st.
John Edwin Walker <i>Criminal Law.</i>	<i>Springfield, Ill.</i>	29 East 46th st.
Charles Rudolph Wendt Stevens Institute, two years. <i>Criminal Law.</i>	<i>New York City</i>	25 East 37th st.
Arthur Werdenschlag College of the City of New York, B.S., 1895. <i>Criminal Law, Political Economy, and Finance.</i>	<i>New York City</i>	140 West 48th st.
Arthur Louis Wessel <i>Criminal Law.</i>	<i>New York City</i>	47 West 70th st.
Shelton King Wheeler Yale University, A.B., 1894. <i>Criminal Law</i>	<i>Chattanooga, Tenn.</i>	163 Madison Ave.
Lewis Morris White <i>International Private Law.</i>	<i>Binghamton, N. Y.</i>	321 East 42d st.
William Cravath White Cornell University, Ph.B., 1890; LL.B., 1895. <i>Comparative Jurisprudence.</i>	<i>Nashville, Tenn.</i>	129 Lexington ave.

NAME	RESIDENCE	CITY ADDRESS
Harry Payne Whitney Yale University, A.B., 1894. <i>Criminal Law.</i>	<i>New York City</i>	2 West 57th st.
Reginald Effingham Wigham <i>Criminal Law.</i>	<i>New York City</i>	142 East 40th st.
John McKinlay Wight Leland Stanford, Jr., University, A.B., 1893. <i>Criminal Law.</i>	<i>Toronto, Ont.</i>	150 East 53d st.
Arthur Kyle Wing <i>Criminal Law, Political Economy.</i>	<i>St. Petersburg, Pa.</i>	140 East 47th st.
Jeremiah Wood <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(40 Hart st.)
Christian C. H. Zillman University State of Missouri, B.S., 1893. <i>Criminal Law.</i>	<i>Chicago, Ill.</i>	69 West 49th st.
Total.....		208

## SUMMARY

Number of students registered primarily in the Faculty of Political Science.....	62
Students of other university faculties pursuing studies under the Faculty of Political Science :	
Law.....	208
Mines.....	2
Philosophy.....	27
Pure Science.....	5
	<hr/> 242
Seniors in the School of Arts.....	37
Total number of students receiving instruction.....	<hr/> 341

## SCHOOL OF PHILOSOPHY

The following departments are represented in the Faculty :

ENGLISH	INDO-IRANIAN LANGUAGES
ENGLISH LANGUAGE AND	LATIN LANGUAGE AND LIT-
LITERATURE	ERATURE
LITERATURE	SEMITIC LANGUAGES AND
RHETORIC	RABBINICAL LITERATURE
GERMANIC LANGUAGES AND	ROMANCE LANGUAGES AND
LITERATURES	LITERATURES
GREEK LANGUAGE AND LIT-	PHILOSOPHY, PSYCHOLOGY,
ERATURE	AND EDUCATION

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### Officers of the Faculty

NICHOLAS MURRAY BUTLER, Ph.D.....	<i>Dean and ex-officio Member of the University Council</i>
EDWARD DELAVAN PERRY, Ph.D.....	<i>Secretary and Elected Delegate to the University Council</i>

### Faculty

SETH LOW, LL.D., *President*

HENRY DRISLER, LL.D.,	<i>Professor Emeritus of the Greek Language and Literature</i>
THOMAS RANDOLPH PRICE, M.A., LL.D.,	<i>Professor of the English Lan- guage and Literature</i>
HARRY THURSTON PECK, Ph.D.,	<i>Professor of the Latin Language and Lit- erature</i>
NICHOLAS MURRAY BUTLER, Ph.D.,	<i>Professor of Philosophy and Education</i>
WILLIAM HENRY CARPENTER, Ph.D.,	<i>Professor of Germanic Philology</i>
JAMES MCKEEN CATTELL, Ph.D.,	<i>Professor of Experimental Psychology</i>
EDWARD DELAVAN PERRY, Ph.D.,	<i>Jay Professor of the Greek Language and Literature</i>
ABRAHAM VALENTINE WILLIAMS JACKSON, Ph.D.,	<i>Professor of the Indo- Iranian Languages</i>
ADOLPHE COHN, LL.B., A.M.,	<i>Professor of the Romance Languages and Literatures</i>
GEORGE EDWARD WOODBERRY, A.B.,	<i>Professor of Literature</i>

BRANDER MATTHEWS, A.M., LL.B., *Professor of Literature*

RICHARD JAMES HORATIO GOTTHEIL, Ph.D., *Professor of Rabbinical Literature and the Semitic Languages*

HENRY ALFRED TODD, Ph.D., *Professor of Romance Philology*

GEORGE RICE CARPENTER, A.B., *Professor of Rhetoric and English Composition*

JAMES RIGNALL WHEELER, Ph.D., *Professor of Greek*

JAMES HERVEY HYSLOP, Ph.D., *Professor of Logic and Ethics*

JAMES CHIDESTER EGBERT, JR., Ph.D., *Adjunct Professor of Latin*

NOTE: For details as to other officers of instruction, see departmental statements.

### GENERAL STATEMENT

The Faculty of Philosophy has charge of the university courses of instruction and research in philosophy, philology, and letters. Any duly matriculated university student is at liberty to combine courses of study and investigation under this faculty with courses offered by the University Faculties of Law, Medicine, Mines (Applied Science), Political Science, and Pure Science.

Students are received either as candidates for the degrees of Bachelor of Arts, Master of Arts, or Doctor of Philosophy, or to pursue special or partial courses. Some courses of lectures are open to the public, men and women alike, on payment of an auditor's fee. No auditor will be admitted to any course without the consent of the instructor, previously obtained. Auditors do not have and cannot receive any university recognition whatever.

Students enrolled either in the General, the Union, or the Jewish Theological Seminary, in the city of New York, who may be designated for the privilege by the authorities of those institutions, and accepted by the President of Columbia College, are admitted to the courses offered by the Faculty of Philosophy free of any charge for tuition.

Students enrolled in the Art Schools of the Metropolitan Museum of Art, who may be designated for the privilege by the authorities of those schools, and accepted by the President of Columbia College, are permitted to attend the courses of lectures on archæology and æsthetics free of any charge for tuition.

By the terms of an alliance between Columbia College and the Teachers College, 120th Street, Morningside Heights, duly qualified students of the Teachers' College are permitted to enter the courses offered by the Faculty of Philosophy, either as candidates for degrees or as special students.

All of these institutions offer reciprocal privileges to students of Columbia College.

### ADMISSION AND ATTENDANCE

Students desiring to pursue their studies under the direction of the Faculty of Philosophy as candidates for a degree, must have completed the curriculum of some college in good standing at least to the close of the junior year. Certificates of graduation or dismissal from institutions of learning in foreign countries are also accepted.

Candidates for the degree of Bachelor of Arts are required to pursue courses of instruction amounting in all to not less than fifteen hours of attendance per



week for one year, and must conform to such requirements regarding a graduation thesis as are established for members in the senior class in the School of Arts. Their selection of studies is not confined to those in this Faculty. Students may pursue courses offered by the Faculty of Political Science or the Faculty of Pure Science, or the first-year course in the School of Law or the School of Medicine, and count the same as part of the requirement for the Bachelor's degree.

Candidates for the degrees of Master of Arts and Doctor of Philosophy must hold a Bachelor's degree from some college in good standing and remain in residence for not less than one and three years respectively. They are required to pursue courses of study or research in one major and two minor subjects, but are not held to any fixed number of hours of attendance per week.

Candidates for the degree of Doctor of Philosophy who have been in residence at other universities are given credit for the same.

Students who are not candidates for a degree are admitted to any courses which they are found competent to undertake.

There are no examinations for admission, either as candidates for a degree or as special students. Students are admitted at any time during the year, and may present themselves for examination for a degree whenever the requirements as to residence and an essay or dissertation have been complied with.

For fees see page 18.

## COURSES OF STUDY AND RESEARCH

For the courses offered for 1895-96, see departmental statements, as below. For more detailed accounts of the courses and for the tender of 1896-97, application should be made for circular of the School of Philosophy.

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- Experimental Psychology, page 115
- Greek (including Archæology and Epigraphy), page 77
- Latin (including Epigraphy and Roman Archæology), page 84
- English, page 69
- Literature, page 70
- Germanic Languages, page 74
- Romance Languages :
  - French, page 124
  - Italian, page 127
  - Spanish, page 128
  - Provençal, page 127
  - Portuguese and Rumanian, page 128
  - Romance Philology, page 128
- Oriental Languages, page 106
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- Study of Languages, page 109
  - Courses at the Union Theological Seminary :
  - New Testament Greek, page 78

## REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Philosophy; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

(Addresses other than those in New York City are enclosed in parentheses.)

### UNIVERSITY STUDENTS.

NAME	RESIDENCE	CITY ADDRESS
Benjamin William Arnett	<i>Wilberforce, Ohio</i>	155 West 53d st.
Wilberforce University, A.B., 1886. <i>Education, Philosophy, Psychology</i> ; Political Science.		
William Rosenzweig Arnold	<i>New York City</i>	41 East 69th st.
Ohio Wesleyan University, A.B., 1892. <i>Semitic, Philosophy.</i>		
James Lincoln Bahret	<i>Poughkeepsie, N. Y.</i>	41 East 69th st.
Wesleyan University, A.B., 1895. <i>German.</i>		
Henry Watterson Bainton	<i>New York City</i>	41 East 69th st.
Columbia College, A.B., 1893. <i>Semitic, Greek.</i>		
Harold Baldwin	<i>Austin, Texas</i>	41 East 69th st.
Drake University, B.D., 1893. <i>English Literature, Philosophy.</i>		
Ernest Merrill Bartlett	<i>Newport, N. H.</i>	41 East 69th st.
Amherst College, A.B., 1894. <i>Philosophy.</i>		
William Henry Bawden	<i>New York City</i>	606 Lexington ave.
Columbia College, A.B., 1893. <i>Philosophy, Greek</i> ; Political Science.		
Arthur Beatty	<i>Kirkton, Ontario,</i>	601 Lexington ave.
University of Toronto, A.B., 1893. <i>English, Literature, Germanic Languages and Literatures, Romance Languages and Literatures.</i>		
William Bennett Bebb	<i>Minneapolis, Minn.</i>	41 East 69th st.
College of Law, University of Minnesota, LL.B., 1892; LL.M., 1893. <i>Philosophy.</i>		
Julius August Bewer	<i>Dusseldorf, Germany</i>	162 East 82d st.
Gymnasium, Dusseldorf, Germany, <i>Testimonium Maturitatis</i> , 1895. <i>Greek, Semitic.</i>		
George Brauer	<i>New York City</i>	41 East 69th st.
<i>Philosophy.</i>		

NAME	RESIDENCE	CITY ADDRESS
Ralph Lionel Brydges University of Toronto, three years. <i>Philosophy</i> ; Political Science.	<i>Islip, N. Y.</i>	Columbia College
Edmund Burke College City of New York, A.B., 1890. <i>Latin, Greek.</i>	<i>New York City</i>	156 East 48th st.
Alonzo R. Campbell Law; <i>German.</i>	<i>Independence, Iowa</i>	447 Lexington ave.
Frank Wadleigh Chandler Brooklyn Polytechnic Institute, A.B., 1895. <i>Literature, Philosophy.</i>	<i>Brooklyn, N. Y.</i>	(177 So. Oxford st.)
Edward Scott Claffin Adelbert College, A.B., 1895. <i>Literature.</i>	<i>Cleveland, O.</i>	41 East 69th st.
Samuel Tilden Clifton Lafayette College, A.B., 1894. <i>Philosophy.</i>	<i>Easton, Penn.</i>	50 East 70th st.
Simeon Edward Cohn Mines; <i>German, French.</i>	<i>New York City</i>	31 West 58th st.
Theodore Frelinghuysen Collier Hamilton College, A.B., 1894. <i>Romance Languages and Literatures, Literature.</i>	<i>Clinton, N. Y.</i>	(Englewood, N. J.)
Roger Lewis Conant Columbia College, A.B. <i>Latin, Greek, Sanskrit.</i>	<i>Newark, N. J.</i>	(11 Taylor st.)
James Walton Cooper Doane College, A.B., 1891; Columbia College, A.M., 1894. <i>Romance Languages and Literatures, English.</i>	<i>Crete, Nebraska</i>	150 East 53d st.
Harry Prosper Corser Lafayette College, Ph.B., 1885; M.S., 1888. <i>Philosophy.</i>	<i>New York City</i>	41 East 69th st.
James Sloane Coskey <i>Semitic.</i>	<i>Londonderry, Ireland</i>	41 East 69th st.
Joseph Germain Charles Cottier Stevens Institute of Technology, M.E., 1894. Pure Science; <i>Education.</i>	<i>Jersey City, N. J.</i>	14 Maiden Lane
William Hume Cronyn Toronto University, A.B., 1895. <i>Literature, English, Philosophy.</i>	<i>London, Can.,</i>	32 East 45th st.
Antonius Darms Mission House College, Franklin, Wis., A.B., 1889. <i>Philosophy.</i>	<i>Philadelphia, Pa.</i>	700 Park ave.
Israel Davidson College City of New York, A.B., 1895. <i>Semitic, English, Literature.</i>	<i>New York City</i>	110 East Broadway
Bartholomew Demeter Gymnasium, Sarospotek, Hungary, <i>Testimonium Maturitatis</i> , 1890. <i>English, Literature, Greek, Latin, Philosophy.</i>	<i>New York City</i>	299 East 8th st.

NAME	RESIDENCE	CITY ADDRESS
William Theobald Dempsey Northern Indiana Normal College, A.B., 1887. <i>Literature, Greek.</i>	<i>Pittsburgh, Penn.</i>	(South Orange, N. J.)
Charles Alfred Downer College City of New York, A.B., 1886. <i>Romance Languages and Literatures, Latin.</i>	<i>New York City</i>	17 Lexington ave.
Albert Frost Earnshaw Princeton College, A.B., 1892. <i>Philosophy; Political Science.</i>	<i>Lowville, N. Y.</i>	41 East 69th st.
Oscar Weeks Ehrhorn College City of New York, A.B., 1895. <i>Law; Philosophy.</i>	<i>New York City</i>	215 Ninth ave.
Elmer Ellsworth Emhoff Hooster University, A.B., 1892. <i>English.</i>	<i>Sprankle Mills, Pa.</i>	50 East 70th st.
George Hooper Ferris Brown University, A.B., 1891; A.M., 1893. <i>Philosophy; Political Science.</i>	<i>New York City</i>	163 East 71st st.
John Driscoll Fitz-Gerald Columbia College, A.B., 1895. <i>Romance Languages and Literatures, Latin.</i>	<i>Newark, N. J.</i>	57 Liberty st.
Gideau Henry Fitz-Randolph Alfred University, A.B., 1888. <i>Philosophy.</i>	<i>Marlboro, N. J.</i>	41 East 69th st.
Jay Gottwals Francis Ursinus College, A.B., 1891. <i>English.</i>	<i>Oaks, Pa.</i>	41 East 69th st.
Shepherd Ivory Franz Columbia College, A.B., 1894. <i>Psychology, Education, Anthropology.</i>	<i>Jersey City, N. J.</i>	
Theodore Arthur Gessler University of the City of New York, A.B., 1894. <i>Philosophy, Semitic; Political Science.</i>	<i>New York City</i>	719 St. Nicholas ave.
Albert Stratton Gilbert Lawrence University, A.B., 1895. <i>Philosophy; Political Science.</i>	<i>Palmyra, Wis.</i>	49 East 69th st.
Frederick Christopher Grant Rutgers College, A.B., 1894. <i>Philosophy, Greek; Political Science.</i>	<i>Plainfield, N. J.</i>	
Harold Griffing Columbia College, A.B., 1890; Ph.D., 1895. <i>Psychology.</i>	<i>New York City</i>	729 Amsterdam ave.
Abel Joel Grout University of Vermont, Ph.B., 1890. <i>Pure Science; Education.</i>	<i>Newfane, Vt.</i>	132 West 63d st.
Henry George Gunn Manitoba University, Winnipeg, Canada, A.B., 1894. <i>Germanic Languages.</i>	<i>Manitoba, Canada</i>	41 East 69th st.
Gustave Haas <i>Greek, Philosophy, Semitic Languages.</i>	<i>Springfield, Mass.</i>	41 East 69th st.

NAME	RESIDENCE	CITY ADDRESS
Frederick Smith Hall Wesleyan University, A.B., 1893. Political Science; <i>German, French.</i>	<i>Montclair, N. Y.</i>	
Victor Harold Hegstrom Augustine College, A.B., 1890. Yale University, Ph.D., 1894. <i>German.</i>	<i>Brooklyn, N. Y.</i>	(398 McDonough st.)
Henry Eugene Houston Columbia College, A.B., 1895. <i>Psychology, Education; Pure Science.</i>	<i>Paterson, N. Y.</i>	(Vreeland ave.)
William James Hutchins Yale College, A.B., 1892. <i>Philosophy; Political Science.</i>	<i>Cleveland, Ohio</i>	41 East 69th st.
Judah Joffe Columbia College, A.B., 1893. <i>Classical Philosophy.</i>	<i>Woodbine, N. Y.</i>	Columbia College.
Herbert Macleod Johnstone Columbia College, A.B., 1894; A.M., 1895. <i>Literature, English, Philosophy.</i>	<i>Plainfield, N. Y.</i>	Columbia College
Daniel Jordan Faculty of Besançon, France, B.S., 1888; State Normal College, Albany, N. Y., B.Pd., 1893. <i>Romance Languages and Literatures, Philosophy.</i>	<i>New York City</i>	33 East 74th st.
Emil Alexander Charles Keppler Columbia College, Ph.B., 1895. <i>Literature, Philosophy, English.</i>	<i>New York City</i>	28 West 70th st.
Cassius Jackson Keyser Missouri State University, B.S., 1892. <i>Pure Science; Philosophy.</i>	<i>New York City</i>	178 West 94th st.
Chalmers Kilbourne Trinity University, Texas, A.B., 1893. Lebanon, Tenn., B.D., 1895. <i>Philosophy; Political Science.</i>	<i>Ferris, Texas</i>	41 East 69th st.
Henry Kingham (Rev.) <i>Philosophy, Latin.</i>	<i>West Orange, N. Y.</i>	
Asbury Krone Miami University, Oxford, O., A.B., 1892. <i>Philosophy.</i>	<i>New York City</i>	41 East 69th st.
Charles Kuntze Political Science; <i>Philosophy.</i>	<i>Zurich, Switzerland</i>	314 Henry st.
Elliott Woodbury Lamson Brown University, A.B., 1893. Cornell University, A.M., 1894. Political Science; <i>Philosophy.</i>	<i>Hamilton, Mass.</i>	139 East 48th st.
William David Landis Cumberland University, A.B., 1893; B.D., 1895. <i>Philosophy, Greek; Political Science.</i>	<i>Waverly, Tenn.</i>	41 East 69th st.
John Kasson Lathrop Cornell University, A.B., 1894. <i>Greek, Latin, Sanskrit.</i>	<i>Cortland, N. Y.</i>	350 West 58th st.
James Anderson Laurie, Jr. Oregon State University, A.B., 1894. <i>English.</i>	<i>Anacortes, Wash.</i>	41 East 69th st.

NAME	RESIDENCE	CITY ADDRESS
Frederick Houk Law Amherst College, A.B., 1895. <i>English, Literature, Education.</i>	<i>Oxford, N. Y.</i>	115 West 49th st.
George Alfred Lawrence Stanford University, A.B., 1892. Columbia College (College of Physicians and Surgeons), M.D., 1895. Pure Science; <i>Psychology.</i>	<i>Los Gatos, Cal.</i>	30 West 36th st.
Wilfrid Lay Columbia College, A.B., 1893. <i>Philosophy, Psychology, Latin, Political Science.</i>	<i>New Rochelle, N. Y.</i>	(71 Willow Drive)
Arthur Maxwell Line Harvard College, A.B., 1895. Medicine; <i>Philosophy.</i>	<i>Marion, Ind.</i>	140 East 54th st.
Thomas Vincent Loughran Manhattan College, A.B., 1895. Law; <i>German.</i>	<i>New York City</i>	445 West 47th st.
Frederic Ludlow Luqueer Columbia College, A.B., 1894. <i>Education, Psychology.</i>	<i>Brooklyn, N. Y.</i>	Columbia College
Willard Crosby Lyon University of Minnesota, B.S., 1895. <i>Philosophy.</i>	<i>Fargo, N. Dak.</i>	41 East 69th st.
John Angus Mac Vannel Toronto University, A.B., 1893; A.M., 1894. <i>Philosophy, Anthropology; Political Science.</i>	<i>St. Mary's, Ontario</i>	601 Lexington ave.
Arba John Marsh Bates College, Lewiston, Me., A.B., 1894. Political Science; <i>Philosophy.</i>	<i>Keuka College, N. Y.</i>	50 East 70th st.
Walter Taylor Marvin Columbia College, A.B., 1893. <i>Philosophy; Political Science.</i>	<i>New York City</i>	64 East 49th st.
Simon James MacLean Toronto University, A.B., 1894; LL.B., 1895. Political Science; <i>Psychology.</i>	<i>Rosemont, Ontario</i>	675 Lexington ave.
Charles Eddy McCarthy Law; <i>German.</i>	<i>Troy, N. Y.</i>	18 East 47th st.
Leonard Beecher McWhood Columbia College, A.B., 1893. <i>Psychology.</i>	<i>Newark, N. J.</i>	(136 Pennsylvania ave.)
Isaac Menline Mines; <i>German.</i>	<i>New York City</i>	356 East 69th st.
Robert Dodge Merrill Rutgers College, A.B., 1893. <i>Philosophy.</i>	<i>New York City</i>	41 East 69th st.
Carl Paul Metzler <i>Philosophy.</i>	<i>Sonneberg, Germany</i>	41 East 69th st.
Charles Baird Mitchell <i>English.</i>	<i>New York City</i>	41 East 68th st.
James Mitchell Alma College, Mich., Ph.B., 1893. Political Science; <i>English.</i>	<i>Breckenridge, Mich.</i>	223 East 48th st.



NAME	RESIDENCE	CITY ADDRESS
Lewis Freeman Mott College City of New York, B.S., 1883; M.S., 1886. <i>Romance Languages and Literatures, German.</i>	<i>New York City</i>	367 West 19th st.
Joseph Sakunoshino Motoda Kenyon College, A.B., 1891; A.M., 1893. University of Pennsylvania, Ph.D., 1895. <i>Philosophy.</i>	<i>Kurume, Japan</i>	401 West 23d st.
George Demetrius Nicholas Smyrna College, Asia Minor, A.B., 1877. <i>Greek, Semitic, Political Science.</i>	<i>Smyrna, Asia Minor</i>	41 East 69th st.
Conrad Hjalmar Nordby College City of New York, B.S., 1886. <i>German, Education.</i>	<i>New York City</i>	30 West 132d st.
Milton James Norton Oberlin College, A.B., 1894. <i>Political Science; Philosophy.</i>	<i>Oberlin, Ohio</i>	41 East 69th st.
Takeo Noya Franklin and Marshall College, A.B., 1890; A.M., 1893. <i>Philosophy, Education; Political Science.</i>	<i>Wakamatsu, Aizu, Japan</i>	41 East 69th st.
Charles Percy O'Connor Brooklyn Polytechnic Institute, B.S., 1892. <i>German.</i>	<i>Brooklyn, N. Y.</i>	(149 Clinton st.)
George N. Olcott Columbia College, A.B., 1893. <i>Latin, Greek, Greek Archaeology and Epigraphy.</i>	<i>Ridgefield, Conn.</i>	The Alpine, 33d st. and B'dway
Max Osterberg Columbia College, E.E., 1894. <i>Pure Science; Education.</i>	<i>New York City</i>	113 East 65th st.
Samuel Minturn Peck University of Alabama, A.M., 1876. <i>English, Literature.</i>	<i>Tuskaloosa, Ala.</i>	30 East 28th st.
Joseph Daniel Peters North Western College, Geneseo, Ill., A.B., 1886. <i>Political Science; Philosophy, Literature.</i>	<i>Hanover, Penn.</i>	41 East 69th st.
Horace Tracy Pitkin Yale University, A.B., 1892. <i>Philosophy.</i>	<i>New Hartford, Conn.</i>	41 East 69th st.
Bertram Pittis <i>Law; German.</i>	<i>Plainfield, N. J.</i>	234 West 44th st.
Arthur Augustus Powers Columbia College, two years. <i>Political Science; Psychology.</i>	<i>New York City</i>	9 West 87th st.
Nathaniel Miller Pratt University of Vermont, A.B., 1893. <i>Philosophy; Political Science.</i>	<i>Montpelier, Vt.</i>	41 East 69th st.
Vergil Prettyman Dickman College, A.B., 1892. <i>Education.</i>	<i>Seaford, Del.</i>	Teachers' College
Hugo Radau Gymnasium, Friedland, Prussia, <i>Testimonium Maturitatis</i> , 1890. <i>Semitic Language, English.</i>	<i>St. Louis, Mo.</i>	Chelsea sq.

NAME	RESIDENCE	CITY ADDRESS
James Henry Rankin University of Minnesota, 1892-93. <i>Philosophy</i> ; Political Science.	<i>Minneapolis, Minn.</i>	41 East 69th st.
Franklin Peters Reinhold Adelbert College, A.B., 1895. <i>Literature.</i>	<i>Upper Sandusky, O.</i>	41 East 69th st.
Charles Hermann Reinsberg Princeton College, A.M., 1890. <i>Germanic Languages and Literatures, English.</i>		175 Ninth ave.
Samuel Willard Richardson Brown University, A.B., 1894. <i>Philosophy</i> ; Political Science.	<i>Painesville, Ohio</i>	41 East 69th st.
Elias Podryabinnick Robinson University of City of New York, B.S., 1893. <i>French.</i>	<i>New York City</i>	314 Henry st.
August Rupp College City of New York, A.B., 1884. <i>Latin, Roman Archaeology, Greek.</i>	<i>New York City</i>	225 East 19th st.
Frederick William Sanders Harvard University, A.B., 1883; A.M., 1892; University of Chicago, Ph.D., 1895. Political Science; <i>Education, German.</i>	<i>New York City</i>	71 East 85th st.
Kumetaro Sasao Meiji-Gakuin, Tokio, Japan, <i>Testimonium Maturitatis</i> , 1892; Auburn Theological Seminary, B.D., 1895. <i>Philosophy, Psychology, Education.</i>		50 East 70th st.
George Reese Satterlee Columbia College, A.B., 1894. <i>Medicine</i> ; <i>Psychology.</i>	<i>New York City</i>	60 East 78th st.
George Crosby Saunders College of the City of New York, B.S., 1895. <i>Mines</i> ; <i>German.</i>	<i>New York City</i>	104 West 92d st.
Leo Schafran College of the City of New York, B.S., 1895. <i>Law</i> ; <i>German.</i>	<i>New York City</i>	1644 Madison ave.
Albert Schneider College of Physicians and Surgeons, Chicago, M.D., 1887; University of Illinois, B.S., 1894; University of Minnesota, M.S. 1894. <i>Pure Science</i> ; <i>Psychology.</i>	<i>New York City</i>	41 West 60th st.
Charles Herbert Scholey Adelbert College, Western Reserve University, A.B., 1895. <i>Philosophy, Greek.</i>	<i>Cleveland, Ohio</i>	41 East 69th st.
Detlef Heinrich Schroeder Iowa Wesleyan University, A.B., 1895 <i>English.</i>	<i>Council Bluff, Iowa</i>	41 East 69th st.
DeWitt James Seligman Columbia College, Ph.B., 1883; LL.B., 1884. <i>Literature.</i>		328 West 58th st.
Charles Granville Sewall Williams College, A.B., 1893. <i>Psychology.</i>	<i>Schenectady, N. Y.</i>	41 East 69th st.

NAME	RESIDENCE	CITY ADDRESS
Frank Robert Shepard Trinity College, N. C., A.B., 1893. <i>Greek, Philosophy</i> ; Political Science.	<i>Asheville, N. C.</i>	41 East 69th st.
James Dickinson Simmons Lafayette College, A.B., 1893. <i>Philosophy</i> ; Political Science.	<i>Hagerstown, Md.</i>	41 East 69th st.
Herman Simpson University of City of New York, A.B., 1894. Political Science; <i>Philosophy</i> .	<i>New York City</i>	312 Madison st.
James Franklin Smith Bethel College, A.B., 1892; Cumberland University, B.D., 1893. <i>Philosophy</i> ; Political Science.	<i>Eaton, Tenn.</i>	41 East 69th st.
Edward Gleason Spaulding University of Vermont, B.S., 1894. Pure Science; <i>Philosophy</i> .	<i>Burlington, Vt.</i>	118 West 69th st.
William Sawyer Spencer Boston University, A.B., 1893. <i>Philosophy</i> .	<i>Montpelier, Vt.</i>	41 East 69th st.
Frederick Tholuck Steele Wabash College, A.B., 1892. <i>Psychology</i> .	<i>New York City</i>	41 East 69th st.
Calvin Wilfred Stewart Whitworth College, Wash., A.M., 1895. <i>English</i> .	<i>Sumner, Wash.</i>	41 East 69th st.
Edward Emerson St. John Wabash College, A.B., 1890; A.M., 1893. <i>Greek, Philosophy</i> ; Political Science.	<i>Salem, Ind.</i>	41 East 69th st.
Frederick Emerson Stockwell Brown University, A.B., 1890. <i>Philosophy, Ethics</i> .	<i>Providence, R. I.</i>	41 East 69th st.
Shiroshi Tada Meiji Gakuin, Tokio, <i>Testimonium maturitatis</i> , 1892. <i>German, Philosophy</i> ; Political Science.	<i>Tokio, Japan</i>	41 East 69th st.
John Henry Thompson Rutgers College, A.B., 1894. <i>Greek, Philosophy</i> .	<i>New Brunswick, N. J.</i>	41 East 69th st.
Charles Henry Topping University of Minnesota, B.S., 1894. Political Science; <i>Romance Languages</i> .	<i>Minneapolis, Minn.</i>	50 East 70th st.
Frank Leo Tufts Antioch College, B.S., 1891; Harvard University, A.B., 1894. Pure Science; <i>German</i> .	<i>Yellow Springs, Ohio</i>	233 East 48th st.
Henry Hallam Tweedy Yale College, A.B., 1891. <i>Philosophy</i> .	<i>Binghamton, N. Y.</i>	41 East 69th st.
Walter Shepard Ufford Amherst College, A.B., 1882; A.M. 1885. Political Science; <i>German</i> .	<i>New York City</i>	208 West 34th st.

NAME	RESIDENCE	CITY ADDRESS
John Garrett Underhill	<i>Brooklyn, N. Y.</i> Polytechnic Institute of Brooklyn, A.B., 1894. <i>Literature, Philosophy.</i>	(97 Lafayette ave.)
Newton Foster Vail	<i>Geneva, N. Y.</i> Hobart College, A.B., 1890; Yale College, A.B., 1892. <i>Latin, Greek.</i>	606 Lexington ave.
Henry Van Haagen	<i>Franklin, Wis.</i> Mission House College, A.B., 1892. <i>Philosophy.</i>	41 East 69th st.
Henry Gustavus Vick	<i>Grafton, S. Dak.</i> University of North Dakota, Grand Forks, N. D., A.B., 1893. Political Science; <i>German.</i>	260 West 54th st.
Ernest Louis Walz, Jr.	<i>Plainfield, N. J.</i> <i>Philosophy</i> ; Political Science.	700 Park ave.
William Alexander Wasson	<i>Millburn, N. J.</i> <i>Philosophy.</i>	63 West 128th st.
Henry Lehman Weil	<i>New York City</i> Political Science; <i>Rhetoric, German.</i>	42 West 70th st.
Arthur Werdenschlag	<i>New York City</i> College of the City of New York, B.S., 1895. Law; <i>German.</i>	140 West 48th st.
Richard Frederick Wertz	<i>Shamrock, Pa.</i> Dickinson College, A.B., 1895. <i>English.</i>	41 East 69th st.
Chester James Wilcomb	<i>Chester, N. H.</i> Harvard College, A.B., 1895. <i>Philosophy.</i>	41 East 69th st.
James Perry Worden	<i>Hastings-on-Hudson</i> Columbia College, A.B. 1895. <i>Germanic Languages and Literatures, Greek.</i>	Columbia College
Alfred John Wright	<i>Sandusky, Ohio</i> Adelbert College, Cleveland, O., A.B., 1894. <i>Philosophy.</i>	41 East 69th st.
Otto Zeitfuchs	<i>New York City</i> Gymnasium Zuellichau, <i>Testimonium maturitatis</i> , 1888. <i>Greek, Latin, Semitic.</i>	Morris Heights, N. Y.
Total.....		142

## GRADUATE STUDENTS REGISTERED THROUGH BARNARD COLLEGE.

Jeanette Swan Browne	<i>New York City</i> Harvard University, A.B., cert., 1895. <i>Greek.</i>	22 West 60th st.
Louise Sheffield Brownell	Bryn Mawr College, A.B., 1893. <i>English.</i>	322 West 56th st.
Ella Fitz-Gerald Bryson	<i>New York City</i> Columbia College, A.B., 1894. <i>Greek, Latin, Philosophy.</i>	164 West 73d st.

NAME	RESIDENCE	CITY ADDRESS
Mary Campbell University of Wisconsin, B.L., 1895. <i>Education, Psychology.</i>	<i>Milwaukee, Wis.</i>	153 East 62d st.
Martha Reynolds Clarke Brown University, A.B., 1895. Pure Science; <i>German.</i>	<i>Providence, R. I.</i>	18 West 60th st.
Annette Finnigan Wellesley College, A.B., 1894. <i>Philosophy.</i>	<i>New York City</i>	151 West 81st st.
Lucia Graeme Grieve Wellesley College., A.B., 1883; A.M., 1893. <i>Greek, Sanskrit, Semitic.</i>	<i>New York City</i>	147 East 49th st.
Elizabeth Frances Nammack Columbia College, A.B., 1895. <i>Latin, Greek; Pure Science.</i>	<i>New York City</i>	273 Madison st.
Bertha Haven Putnam Bryn Mawr College, A.B., 1893. <i>Philosophy.</i>	<i>New York City</i>	245 West 75th st.
Ruth Putnam Cornell University, B.L., 1878. <i>Romance Languages.</i>	<i>New York City</i>	165 West 58th st.
Cornelia Hepzibah Bulkley Rogers Wellesley College, A.B., 1883; Yale University, Ph.D., 1894. <i>Romance Languages.</i>	<i>Bridgeport, Conn.</i>	(165 State st., Bkl'n)
Amy T. Farley Rowland Mt. Holyoke College, B.S., 1893. <i>Romance Languages.</i>	<i>New York City</i>	43 West 47th st.
Alice Sterne Smith College, A.B., 1891. <i>Education.</i>	<i>New York City</i>	141 West 118th st.
Amey Talbot Taintor Smith College, B.L., 1895. <i>Latin, English.</i>	<i>New York City</i>	22 West 40th st.
Emma Frances Wallace Vassar College, A.B., 1892. <i>Latin.</i>	<i>Peekskill, N. Y.</i>	32 East 57th st.
Alberta Maude Welch Wellesley College, A.B., 1895. <i>Education.</i>	<i>New York City</i>	32 West 40th st.
Helen Isabel Whiton Smith College, A.B., 1894. <i>English.</i>	<i>Brooklyn, N. Y.</i>	(62 Livingston st.)
Zaidee Williams Columbia College, A.B., 1892. <i>Latin.</i>	<i>Brooklyn, N. Y.</i>	(45 So. Oxford st.)
Total.....		18

SENIORS IN THE SCHOOL OF ARTS PURSUING COURSES OF  
INSTRUCTION FOR THE DEGREE OF A.B. IN THE  
DEPARTMENTS SPECIFIED:

NAME	RESIDENCE	CITY ADDRESS
Charles Siedler Adams <i>Philosophy, English, Greek.</i>	Brooklyn, N. Y.	(203 Hancock st.)
Bernhard Alexander <i>Philosophy.</i>	New York City	33 Pitt st.
Carl Lucas Alsberg <i>Psychology.</i>	New York City	169 East 116th st.
John Richard Atwill <i>Philosophy, Semitic, Latin, English, Greek.</i>	Kansas City, Mo.	238 West 11th st.
Rogers Hammond Bacon <i>Latin, English, Literature, German.</i>	New York City	29 East 28th st.
Edwin Atkinson Bayles <i>English.</i>	Orange, N. Y.	(408 Main st.)
George Philip Bryant <i>Philosophy, Education.</i>	New York City	140 West 15th st.
Granville Burr <i>Spanish.</i>	New York City	513 West 144th st.
Herbert Louis Celler <i>Latin, Philosophy, English.</i>	New York City	61 West 94th st.
Charles du Pont Coudert <i>Spanish, French.</i>	Tuxedo, N. Y.	70 William st.
Walter Scott Dryfoos <i>German, English, Philosophy.</i>	New York City	22 West 69th st.
Henry Louis Austin Fick <i>Greek, Philosophy.</i>	New York City	44 Sixth ave.
Wells Hubert Fitch <i>German, Philosophy, Semitic.</i>	Brooklyn, N. Y.	(374 Herkimer st.)
Robert Hustin Halsey <i>Psychology.</i>	Astoria, N. Y.	(1000 Boulevard)
William Henry Hays <i>French.</i>	New York City	13 East 54th st.
Edward Thomas Johnston <i>Latin, Greek, Sanskrit.</i>	Newtown, N. Y.	353 Third ave.
Walter Colonzi Kretz <i>Psychology.</i>	New York City	149 West 12th st.
Alfred Louis Kroeber <i>French, Literature, Philosophy, Psychology.</i>	New York City	316 West 89th st.
Albert Ralph Lesinsky <i>German, French, Romance, Philology.</i>	New York City	25 East 72d st.
Robert Glenn McCrea <i>English, Philosophy.</i>	Brooklyn, N. Y.	(533 Franklin ave.)
Frederick Augustus Peters <i>German, English, Psychology, Literature, Greek, Philosophy, Semitic, Italian.</i>	New York City	1046 Stebbins ave.
Edwy Guthrie Pitblado <i>Greek, Philosophy, Semitic.</i>	New York City	219 East 27th st.



NAME	RESIDENCE	CITY ADDRESS
William Popper <i>Language, Latin, English, Greek, Semitic, Education, French.</i>	<i>Brooklyn, N. Y.</i>	(60½ Bainbridge st.)
Joseph Myer Proskauer <i>Literature, Philosophy.</i>	<i>Mobile, Ala.</i>	116 West 136th st.
John Wiethauper Russell <i>Philosophy, German, English.</i>	<i>New York City</i>	1965 Seventh ave.
Samuel Swayze Seward, Jr. <i>English, Literature, Philosophy.</i>	<i>New York City</i>	113 West 85th st.
John Hebard Snyder <i>English, German, Literature, Language, Education, Latin.</i>	<i>West Hoboken, N. J.</i>	
John Tilley, Jr. <i>English, Greek, Latin, Literature, Semitic, Philosophy, Education.</i>	<i>New York City</i>	Westchester
Carl Manfred Uhl <i>English.</i>	<i>New York City</i>	113 East 60th st.
John Alfred Valentine <i>English, German, Literature, Philosophy, Latin.</i>	<i>Newton, N. J.</i>	13 St. Luke's pl.
Richard Weil <i>Psychology.</i>	<i>New York City</i>	109 West 77th st.
Edwin Blanchard Woodruff <i>English, Greek, Semitic, Psychology.</i>	<i>Delhi, N. Y.</i>	244 West 42d st.
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Ellery Oswald Anderson <i>English.</i>	<i>New York City</i>	141 East 34th st.
Herman Francis Senftner <i>English.</i>	<i>New York City</i>	108 West 136th st.
Walter Connell Shoup <i>English, Philosophy.</i>	<i>New York City</i>	120 West 82d st.
<hr/>		
William Fenwick Beekman <i>Literature, English.</i>	<i>New York City</i>	119 East 18th st.
Nathan Isaac Bijur <i>English, Literature, Philosophy.</i>	<i>New York City</i>	46 East 73d st.
Samuel Henry Bijur <i>Spanish.</i>	<i>New York City</i>	46 East 73d st.
Henry Edward Keller <i>Philosophy.</i>	<i>Weehawken, N. J.</i>	
William Goadby Loew <i>English.</i>	<i>New York City</i>	25 West 57th st.
Aaron Wager Maddox <i>Greek, English, Philosophy.</i>	<i>Brooklyn, N. Y.</i>	(669½ Quincy st.)
Louis Hasbrouck Newkirk <i>English.</i>	<i>New York City</i>	38 West 34th st.
Frank John Smith <i>English.</i>	<i>Caldwell, Idaho</i>	149 East 47th st.
David Houghtaling Taylor <i>English.</i>	<i>New York City</i>	Hotel Netherland
Total.....		44

SENIORS IN BARNARD COLLEGE PURSUING COURSES OF  
INSTRUCTION FOR THE DEGREE OF A.B. IN THE  
DEPARTMENTS SPECIFIED :

NAME	RESIDENCE	CITY ADDRESS
Alice Goddard Chase English, Language, Philosophy.	<i>Brooklyn, N. Y.</i>	(115 Schermerhorn st.)
Elsie Worthington Clews Greek, Philosophy, Education.	<i>New York City</i>	9 West 34th st.
Carrie Hammerslough Greek, Italian, Philosophy.	<i>New York City</i>	156 East 70th st.
Mary Bradford Harris Greek, Latin, English, Philosophy, Italian.	<i>Flushing, L. I.</i>	
Ada Hinde Hart Latin, English, Philosophy, Italian, Hebrew.	<i>New York City</i>	136 West 79th st.
Anna Cole Mellick Greek, Latin, English.	<i>Montclair, N. J.</i>	(149 Midland ave.)
Clara Meltzer Philosophy, French.	<i>New York City</i>	66 East 124th st.
Louise Place Greek, Latin, English.	<i>New York City</i>	275 West End ave.
May Hinton Pollock Latin, English, Rhetoric.	<i>New York City</i>	161 Convent ave.
Eva Sherwood Potter Latin, English, Philosophy.	<i>Brooklyn, N. Y.</i>	(442 9th st.)
Mary Rogers Roper Greek, Latin, English, Philosophy.	<i>Pelham Manor, N. Y.</i>	
Ettie Stettheimer Greek, English, Philosophy.	<i>New York City</i>	102 West 76th st.
Mary Matilda Stone English, Philosophy, Education.	<i>Brooklyn, N. Y.</i>	(178 Jay st.)
Anne Janet Sutphen Latin, English, Philosophy, French.	<i>Newark, N. J.</i>	(64 Elizabeth ave.)
Clementine Tucker Latin, English, Rhetoric, Philosophy.	<i>Newark, N. J.</i>	(74 Columbia st.)
Bertha Steele Van Riper Latin, English, French.	<i>Brooklyn, N. Y.</i>	(516 Nostrand ave.)
Jessie May Wendover Greek, Latin, English, Philosophy.	<i>Newark, N. J.</i>	(42 Nelson pl.)
Gertrude Wolff Latin, English, Philosophy, Italian.	<i>New York City</i>	125 East 73d st.
Total.....		18

## SUMMARY

Number of students registered primarily in the Faculty of Philosophy :	
Men.....	106
Women (through Barnard College).....	17
	<hr/> 123
Students of other university faculties pursuing studies under the Faculty of Philosophy :	
Law.....	7
Medicine .....	2
Mines .....	3
Political Science.....	16
Pure Science.....	9
	<hr/> 37
Seniors :	
In the School of Arts.....	44
In Barnard College.....	18
	<hr/> 62
Total number of students receiving instruction.....	
	<hr/> 222

## SCHOOL OF PURE SCIENCE

The following departments are represented in the Faculty :

ANATOMY	GEOLOGY
ASTRONOMY	MATHEMATICS
BACTERIOLOGY	MECHANICS
BIOLOGY	MINERALOGY AND
BOTANY	METALLURGY
CHEMISTRY	PHYSICS
PHYSIOLOGY	

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### Officers of the Faculty

ROBERT S. WOODWARD, C.E., Ph.D. . . . . *Dean and ex-officio Member of the  
University Council*  
NATHANIEL L. BRITTON, E.M., Ph.D. . . . . *Secretary*  
JOHN K. REES, A.M., E.M., Ph.D., *Elected Delegate to the University Council*

### Faculty

SETH LOW, LL.D., *President*

J. HOWARD VAN AMRINGE, Ph.D., L.H.D., *Professor of Mathematics*  
OGDEN N. ROOD, A.M., *Professor of Physics*  
THOMAS EGGLESTON, E.M., Ph.D., LL.D., *Professor of Mineralogy and  
Metallurgy*  
CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*  
JOHN K. REES, A.M., E.M., Ph.D., *Professor of Astronomy and Director of  
the Observatory*  
JOHN G. CURTIS, A.M., M.D., *Professor of Physiology*  
ALFRED J. MOSES, E.M., Ph.D., *Adjunct Professor of Mineralogy*  
NATHANIEL L. BRITTON, E.M., Ph.D., *Professor of Botany*  
GEORGE S. HUNTINGTON, M.D., *Professor of Anatomy*  
HENRY FAIRFIELD OSBORN, Sc.D., *Da Costa Professor of Biology*  
EDMUND B. WILSON, Ph.D., *Professor of Invertebrate Zoölogy*  
JAMES F. KEMP, A.B., E.M., *Professor of Geology*  
WILLIAM HALLOCK, A.B., Ph.D., *Adjunct Professor of Physics*  
MICHAEL I. PUPIN, Ph.D., *Adjunct Professor of Mechanics*  
T. MITCHELL PRUDDEN, M.D., *Professor of Pathology*

ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*

THOMAS S. FISKE, A.M., Ph.D., *Adjunct Professor of Mathematics*

HAROLD JACOBY, A.B., *Adjunct Professor of Astronomy*

FRANK N. COLE, Ph.D., *Professor of Mathematics*

FREDERIC S. LEE, Ph.D., *Adjunct Professor and Demonstrator of Physiology*

NOTE: For details as to other officers of instruction, see departmental statements.

### GENERAL STATEMENT

This Faculty has charge of the university courses of instruction and research in all the branches of Pure Science, and especially the supervision of candidates for the degrees of Master of Arts and Doctor of Philosophy in Pure Science. Students in the other University Faculties are at liberty to pursue courses of study and investigation under this Faculty.

Candidates for these degrees taking major subjects in Pure Science will be regarded as under the special jurisdiction of this Faculty, and must apply to the Secretary for registration before entering upon their work. The same registration requirement must also be complied with by candidates who desire to pursue minor or special subjects under this Faculty.

Students of this and other colleges whose requirements conform to the regulations of the School of Arts may be admitted to the senior courses under this Faculty as candidates for the degree of A.B. They must present testimonials from some other institution maintaining an equivalent course of study, to the close of the junior year, or must pass a satisfactory examination upon the studies of the first three years of the School of Arts. Candidates for this degree are required to pursue courses of instruction amounting in all to not less than fifteen hours of attendance per week for one year, and must conform to such requirements regarding a thesis as are established for members of the senior class in the School of Arts. Their selection of studies is not confined to those of this Faculty.

### EXAMINATION

Applications to be examined for the degree of Master of Arts or Doctor of Philosophy must be made on or before April 1st of the academic year in which the examination is desired. The examination shall be oral, at least in part, and in the case of candidates for the degree of Doctor of Philosophy the dissertation must be publicly defended in the presence of the Faculty or of so many of the members as may desire to attend. The instructors in charge of the major and minor subjects must be present and conduct the examination.

RECORD.—At the close of each course the instructor in charge shall enter in the registration book the record of the student, and at the close of each academic year each student shall exhibit his registration book to the Dean or Secretary for record.

TIME.—One year's study in residence in the College is required for the degree of Master of Arts, and three years' study for the degree of Doctor of Philosophy, at least one year of which shall be in residence. Candidates for either of these degrees are expected to devote at least one-half their time

throughout their course of study to the major subject. In the case of laboratory courses this implies two days a week, or its equivalent, as determined by each department. Each minor subject is intended to occupy approximately one-fourth of the time during one year for the degree of Master of Arts, and during one or two years, according to the nature of the subject and the previous training of the candidate, for the degree of Doctor of Philosophy. Students may distribute the remainder of their time either in courses of major or minor reading of subjects wherein their preparation is least complete, or in researches connected with their major subject.

### SPECIAL STUDENTS

Students who are not candidates for a degree are permitted to pursue such courses from among those offered by this Faculty as they may be found qualified to enter upon and as the Dean may approve. In the case of students who have been previously registered under another Faculty the applicant must present the approval in writing of the Dean of that Faculty.

Qualifications of such students shall be determined by the instructors in charge of the courses selected. The standard will conform in general to that required of candidates for degrees.

All applications to pursue courses of study either wholly or in part under the direction of this Faculty shall be made in writing to the Dean, on blank forms prepared for the purpose.

### COURSES OF STUDY

For the courses offered for 1895-96 see departmental statements given below. For more detailed accounts of the courses and for the tender of 1896-97 application should be made for circular of the School of Pure Science.

Mathematics, page 89

Mechanics, page 91

Astronomy, page 40

Physics, page 117

Chemistry, page 48

Mineralogy, page 94

Geology, page 72

Biology, page 42

Botany, page 45

Physiology, page 120

Anatomy, page 35

Bacteriology, page 112



## REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Pure Science; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

(Addresses other than those in New York City are enclosed in parentheses.)

### UNIVERSITY STUDENTS

NAME	RESIDENCE	CITY ADDRESS
Arthur Russell Bauder	<i>Cleveland, O.</i> Case School of Applied Science, B.S., 1889. <i>Mechanics, Mathematics, Political Science.</i>	354 West 56th st.
James Fuller Berry	<i>New York City</i> Columbia College, B.A., 1894. <i>Mathematics, Mechanics, Physics.</i>	215 West 44th st.
Joseph Germain Charles Cottier	<i>Jersey City, N. J.</i> Stevens Institute of Technology, M.E., 1895. <i>Mechanics, Mathematics, Philosophy.</i>	(12 Congress st.)
Bradney Beverly Griffin	<i>New York City</i> College of the City of New York, B.S., 1894. <i>Biology, Botany, Geology.</i>	2058 Vanderbilt ave.
Abel Joel Grout	<i>New York City</i> University of Vermont, Ph.B., 1893. <i>Botany, Zoology, Philosophy.</i>	132 West 63d st.
Adolph Abram Himowich	<i>New York City</i> University of the City of New York, B.S., 1896; M.D., 1887; M.S., 1891. <i>Mechanics, Physics.</i>	136 Henry st.
Henry Eugene Houston	<i>Paterson, N. J.</i> Columbia College, A.B., 1895. <i>Philosophy, Physics.</i>	(Vreeland and 20th ave.)
Cassius Jackson Keyser	<i>New York City</i> Missouri State University, B.S., 1891. <i>Mathematics, Mechanics, Philosophy.</i>	429 Lexington ave.
George Alfred Lawrence	<i>New York City</i> Leland Stanford Jr. University, A.B., 1892. Columbia College of Physicians and Surgeons, M.D., 1895. <i>Biology, Bacteriology.</i>	30 West 36th st.
James Howard McGregor	<i>Bellaire, O.</i> Ohio State University, B.S., 1894. <i>Biology, Physiology, Botany.</i>	249 West 55th st.
Leonard B. McWhood	<i>Newark, N. J.</i> Philosophy, <i>Physics.</i>	(136 Pennsylvania ave.)

NAME	RESIDENCE	CITY ADDRESS
Max Osterberg	<i>New York City</i>	113 East 65th st.
Columbia College, E.E., 1895. <i>Mechanics, Mathematics, Philosophy.</i>		
Frederick Clark Paulmier	<i>Madison, N. Y.</i>	
Princeton College, B.S., 1894. <i>Biology, Botany, Physiology.</i>		
Charles Paul Ernest Peugnet	<i>New York City</i>	231 West 45th st.
Columbia College, C.E., 1895. <i>Mines, Mechanics.</i>		
Charles Tomlinson Rittenhouse	<i>New York City</i>	247 West 138th st.
Stevens Institute of Technology, Mech'l E., 1893. Columbia College, E.E., 1894; A.M., 1895. <i>Mechanics, Mathematics, Astronomy, Political Science.</i>		
Isaac Max Rubino	<i>New York City</i>	24 East 106th st.
Columbia College, A.B., 1895. <i>Biology, Physiology, Chemistry.</i>		
Per Axel Rydberg	<i>Brooklyn, N. Y.</i>	(392 McDonough st.)
University of Nebraska, B.S., 1891; A.M., 1895. <i>Botany, Biology, Mathematics.</i>		
Albert Schneider	<i>New York City</i>	220 East 85th st.
University of Illinois, B.S., 1894; College of Physicians and Surgeons, Chicago, M.D., 1887; University of Minnesota, M.S., 1894. <i>Botany, Philosophy.</i>		
Henry Clapp Sherman	<i>Ash Grove, Va.</i>	252 West 53d st.
Maryland Agricultural College, B.S., 1893. <i>Chemistry, Physiology.</i>		
Percy Hilton Smith	<i>Atlanta, Ga.</i>	21 West 60th st.
Alabama Polytechnic Institute, B.S., 1895. <i>Chemistry, Geology, Political Science.</i>		
Edward Gleason Spalding	<i>Burlington, Vt.</i>	20 East 50th st.
University of Vermont, B.S. 1894. <i>Physics, Chemistry, Philosophy.</i>		
Frank Leo Tufts	<i>Yellow Springs, O.</i>	223 East 48th st.
Antioch College, B.S., 1891; A.M., 1894; Harvard University, A.B., 1894. <i>Physics, Mechanics, Mathematics, Philosophy.</i>		
Ansel Augustus Tyler	<i>Easton, Pa.</i>	(1313 Ferry st.)
Lafayette College, A.B., 1892; A.M., 1895. <i>Botany, Biology, Geology.</i>		
Theodore Greely White	<i>New York City</i>	39 West 26th st.
Columbia College, Ph.B., 1894; A.M., 1895. <i>Bacteriology, Botany, Petrography, Political Science.</i>		
Total..... 24		

## STUDENTS IN BARNARD COLLEGE

Martha Reynolds Clarke	<i>Providence, R. I.</i>	18 West 60th st.
Brown University, A.B., 1895. <i>Botany, Physics, Philosophy.</i>		

NAME	RESIDENCE	CITY ADDRESS
Elizabeth Frances Nammack Columbia College, A.B., 1895. Philosophy, <i>Botany</i> .	<i>New York City</i>	273 Madison st.
Flora Mabel Taylor Vassar College, A.B., 1895. <i>Mathematics</i> .	<i>New York City</i>	40 West 59th st.
Harriet Winfield	<i>New York City</i>	Friends' Seminary, Rutherford pl. Wellesley College, A.B., 1887. <i>Mathematics, Chemistry</i> .
Total . . . . .		4

## SENIORS IN THE SCHOOL OF ARTS

Carl Lucas Alsberg <i>Biology, Mathematics</i> .	<i>New York City</i>	169 East 116th st.
John Richard Atwill <i>Astronomy</i> .	<i>Kansas City, Mo.</i>	238 West 11th st.
Rogers Hammond Bacon <i>Physics, Astronomy</i> .	<i>New York City</i>	29 East 28th st.
Edwin Atkinson Bayles <i>Chemistry, Geology</i> .	<i>Orange, N. J.</i>	(408 Main st.)
Granville Ingraham Burr <i>Geology</i> .	<i>New York City</i>	513 West 144th st.
Herbert Louis Celler <i>Botany, Chemistry</i> .	<i>New York City</i>	61 West 94th st.
Charles du Pont Couderet <i>Mechanics</i> .	<i>Tuxedo, N. Y.</i>	70 William st.
Walter Scott Dryfoos <i>Botany, Chemistry</i> .	<i>New York City</i>	22 West 69th st.
Henry Louis Austin Fick <i>Astronomy</i> .	<i>New York City</i>	44 Sixth ave.
Wells Hubert Fitch <i>Botany</i> .	<i>Brooklyn, N. Y.</i>	(374 Herkimer st.)
Robert Hurtin Halsey <i>Biology, Mathematics, Physics, Mechanics, Astronomy</i> .	<i>Astoria, N. Y.</i>	(1000 Boulevard)
William Henry Hays <i>Astronomy, Biology, Mathematics, Mechanics, Physics</i> .	<i>New York City</i>	13 East 54th st.
John Duer Irving <i>Geology</i> .	<i>Staten Island, N. Y.</i>	
Edward Thomas Johnston <i>Chemistry</i> .	<i>Newtown, N. Y.</i>	353 Third ave.
Walter Colouzzi Kretz <i>Astronomy, Chemistry, Mathematics, Physics</i> .	<i>New York City</i>	149 West 12th st.
Edwy Guthrie Pitblado <i>Astronomy, Geology, Physics</i> .	<i>New York City</i>	219 East 27th st.

NAME	RESIDENCE	CITY ADDRESS
Joseph Myer Proskauer <i>Mathematics.</i>	<i>Mobile, Ala.</i>	116 West 136th st.
Isidorus Ross <i>Astronomy, Chemistry, Geology, Mathematics, Mechanics.</i>	<i>New York City</i>	2078 Seventh ave.
John Wiethauper Russell <i>Chemistry.</i>	<i>New York City</i>	1968 Seventh ave.
John Hebard Snyder <i>Botany.</i>	<i>West Hoboken, N. J.</i>	
John Tilley, Jr. <i>Astronomy.</i>	<i>New York City</i>	Westchester
Carl Manfred Uhl <i>Biology, Chemistry, Physics.</i>	<i>New York City</i>	113 East 60th st.
Richard Weil <i>Biology, Botany, Physiology.</i>	<i>New York City</i>	109 West 77th st.
Edwin Blanchard Woodruff <i>Chemistry, Geology.</i>	<i>Delhi, N. Y</i>	244 West 42d st.
Total.....		24

#### STUDENTS IN THE COLLEGE OF PHYSICIANS AND SURGEONS

Franklin Abbott Dorman Harvard University, A.B. <i>Physiology.</i>	<i>Upper Montclair, N. J.</i>	38 West 60th st.
Eugene Harold Eising College of the City of New York, B.S. <i>Physiology.</i>	<i>New York City</i>	6 East 66th st.
Reginald Furman Harvard University, A.B. <i>Physiology.</i>	<i>New York City</i>	47 West 19th st.
Nathan Williams Green Yale University, A.B. <i>Physiology.</i>	<i>New York City</i>	91 Park ave.
George William Kosmak Columbia College, A.B., 1894. <i>Biology.</i>	<i>New York City</i>	23 East 93d st.
Arthur Maxwell Line Harvard University, A.B., 1895. <i>Anatomy, Philosophy.</i>	<i>Marion, Indiana</i>	(140 West 54th st.)
Dudley De Vere Roberts <i>Biology.</i>	<i>Newark, N. J.</i>	(372 Clinton ave.)
Percy Rivington Turnure Harvard University, A.B., 1894. <i>Physiology.</i>	<i>New York City</i>	417 Fifth ave.
Total.....		8

## STUDENTS IN THE SCHOOL OF MINES

NAME	RESIDENCE	CITY ADDRESS
Frederick Auryansen <i>Mechanics.</i>	<i>Piermont, N. Y.</i>	
Solomon. D. Benoliel <i>Mechanics, Chemistry.</i>	<i>New York City</i>	120 West 35th st.
Edward Joseph Carney <i>Mechanics.</i>	<i>New York City</i>	67 West 68th st.
Charles Derleth <i>Mechanics.</i>	<i>New York City</i>	674 East 135th st.
Joel Pemoff <i>Mechanics.</i>	<i>New York City</i>	244 East Broadway
Herman Alfred Prosser <i>Mechanics.</i>	<i>Brooklyn, N. Y.</i>	(406 Stuyvesant av.)
David Serber <i>Mechanics.</i>	<i>New York City</i>	98 Suffolk st.
Elliot Mathews Sergeant <i>Mechanics.</i>	<i>Summit, N. J.</i>	
Isaac Stander <i>Mathematics.</i>	<i>New York City</i>	64 Avenue B
Total. ....		9

## SPECIAL STUDENTS

Abram Ellsworth Anderson <i>Biology.</i>	<i>Elizabeth, N. J.</i>	(643 Jefferson ave.)
Smith Ely Jelliffe Columbia College, M.D., 1889. <i>Bacteriology.</i>	<i>New York City</i>	231 West 71st st.
Phoebus A. Levene Medical Academy Petersburg, Russia, M.D., 1891. <i>Chemistry.</i>	<i>New York City</i>	128 Henry st.
A. E. Lawrence <i>Geology.</i>	<i>New York City</i>	Majestic Hotel
Henry Lyndon McMillan Princeton College. <i>Chemistry, Finance, Political Science.</i>	<i>Princeton, N. J.</i>	354 West 56th st.
John A. Mathews Washington and Jefferson College, B.S., 1893. Columbia College, A.M., 1895. <i>Physiology, Chemistry.</i>	<i>Washington, Pa</i>	251 West 54th st.
Alfred Pell <i>Biology.</i>	<i>New York City</i>	20 East 35th st.
Frank Schlesinger College of the City of New York, B.S. <i>Astronomy.</i>	<i>New York City</i>	2622 Third ave.
Jerome Sewell <i>Biology, Physics, Chemistry, Philosophy.</i>	<i>New York City</i>	153 East 61st st.

NAME	RESIDENCE	CITY ADDRESS
Francis Bertody Sumner <i>Biology.</i>	<i>Summit, N. J.</i>	
William D. Thornton <i>Geology.</i>	<i>Butte, Mont.</i>	Netherland Hotel
Clifford Wheaton Vaughn <i>Biology, Physiology.</i>	<i>New York City</i>	47 West 83d st.
Ernest Sabin Woodcock Whitman College, B.S., 1895. <i>Geology, Astronomy, Biology, Chemistry, Mineralogy, Botany, Physics.</i>	<i>North Yakima, Wash.</i>	117 Convent ave.
Total.....		13

## STUDENT IN TEACHERS COLLEGE

Robert G. Weyh  
*Physics.*

## SUMMARY

Number of students registered primarily in the Faculty of Pure Science :	
Men.....	34
Women (through Barnard College).....	3
	— 37
Students of other university faculties pursuing studies under the Faculty of Pure Science :	
Medicine.....	8
Mines .....	10
Political Science.....	1
Philosophy.....	2
	— 21
Seniors in the School of Arts.....	24
Student in Teachers College. ....	1
	—
Total number of students receiving instruction...	83



## Publications of the University

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### Columbia University Press

In 1893 the Trustees authorized the formation of a corporation to be known as the Columbia University Press, to which they granted the use of that name subject to revocation, in case of need, at the option of the Trustees. Its object is to provide for the printing and publication of meritorious works on all subjects. The President of Columbia College is its president. Messrs. Macmillan & Co. are its publishing agents.

### University Bulletin

The University Bulletin is issued by the authority of the Trustees of Columbia College. Its purpose is to give a summary of important university and faculty legislation, to record the scientific and literary work of the officers of Columbia College, to furnish information with regard to original investigations that are in progress, to indicate the subjects that occupy the attention of the advanced seminaria, and to give other general information that may be either of immediate interest to inquirers or of permanent value as a matter of record. The Bulletin will appear at intervals of about two months during the college year, and until further notice will be sent free of charge to such alumni of the College as may signify their desire to receive it.

All communications relating to the Bulletin should be addressed to Prof. George R. Carpenter, chairman.

### Serial Studies and Contributions Issued from the College

Studies in History, Economics, and Public Law.

Studies from the Analytical and Assay Laboratories of the School of Mines.

Contributions from the Electrical Engineering Department of the School of Mines.

Contributions from the Herbarium of Columbia College.

Contributions from the Mineralogical Department of Columbia College.

Contributions from the Geological Department of Columbia College.

Contributions from the Observatory of Columbia College.

Contributions to Philosophy, Psychology, and Education.

Biological Contributions : Zoölogy, Columbia College.

Studies from the Department of Pathology, College of Physicians and Surgeons, Columbia College.

Memoirs from the Department of Botany of Columbia College.

The following journals are issued under the direction of members of the faculties of Columbia College, or in co-operation with members of other colleges :

The School of Mines Quarterly.	
The Political Science Quarterly.	
Bulletin of the Torrey Botanical Club.	
Bulletin of the New York Mathematical Society.	
Educational Review.	(In co-operation).
Modern Language Notes.	" "
American Journal of Archæology.	" "
Psychological Review.	" "

## Degrees Conferred during 1894-95

(Exclusive of those published in previous Catalogue.)

### Bachelor of Arts

1. Claude Selwyn Beckwith	24. William Thomas Mason
2. Herbert Doty Brown	25. Albert Ossar Miller
3. Charles Frederick Buckley	26. James Macdonald Mitchell
4. William L. Cahn	27. Charles Gustave Mourraille
5. Lewis Nathaniel Chase	28. Rudolph Neeser
6. Roger Lewis Conant	29. Walter Stephen Newell
7. John Hamilton Potter Conover	30. Charles Walton Ogden, Jr.
8. Frederick Coykendall	31. Henry Berry Pogson
9. Frederick Morse Cutler	32. Frank Judson Pope
10. Schuyler Emerson Day	33. William Howe Ripley
11. Henry William Egner, Jr.	34. James Naumburg Rosenberg
12. William Sanford Evans	35. Isaac Max Rubino
13. John Ewen	36. Frederick Herbert Sill
14. John Driscoll Fitz-Gerald, 2d.	37. Joseph Percy Smyth, Jr.
15. William Oscar Gennert	38. Joel Elias Spingarn
16. George Balthasar Germann	39. Clarence Storm
17. Felix Mortimer Gernsheim	40. Joseph Suydam Stout, Jr.
18. Frederick Berg Hartranft	41. William Dana Street
19. Henry Eugene Houston	42. Stephen Fraser Thayer
20. Conrad Saxe Keyes	43. Frederic Oakman Virgin
21. Maulsby Kimball	44. Richmond Weed
22. Arthur Kline Kuhn	45. David Everett Wheeler
23. Edward Lazansky	46. James Perry Worden

### IN THE COLLEGIATE COURSE FOR WOMEN

Elizabeth Frances Nammack

### FROM BARNARD COLLEGE

1. Caroline Garnar Brombacher	5. Alice Lillie Seligsberg
2. Florence Colgate	6. Celeste Castalia Swenson
3. Louise Benedict Lockwood	7. Jeannie Willard Tatlock
4. Mabel Parsons	8. Gratia Eaton Whithed

**Bachelor of Laws**

- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| 1. Edward Albert Alexander, B.S.     | 18. William Nettleton Kennedy, A.B. |
| 2. Max Jacob Bernheim, A.B.          | 19. Arthur Knox, A.M.               |
| 3. Charles C. Brainerd, A.B.         | 20. Charles S. Miller               |
| 4. Conrad Braker                     | 21. Walter S. Newhouse, A.B.        |
| 5. Edward Stelle Brownson, Jr., A.M. | 22. Nathan Ottinger, B.S., A.M.     |
| 6. Joseph Edmond Bullen, A.M.        | 23. Samuel Pakelnishky              |
| 7. Ferdinand Ezra M. Bullowa, A.M.   | 24. Milton Cornelius Palmer, B.S.   |
| 8. Nathan Platt Bushnell             | 25. William B. Parsons, A.B.        |
| 9. Alfred Arthur Cook, B.S., A.M.    | 26. Raymond Reubenstein, A.B.       |
| 10. Torrey Everett, A.B.             | 27. Lester R. Riggs                 |
| 11. Lewis Herbert Freedman, A.B.     | 28. George Rosendale, Ph.B.         |
| 12. John Henry Hammond, Ph.B.        | 29. James Murray Sanderson          |
| 13. Emanuel Hertz, A.M.              | 30. Maurice Sichel                  |
| 14. Eugene Baker Hoffman             | 31. James Bennett Southard          |
| 15. Edwin Sumner Hunt, A.B.          | 32. Augustus C. Stevens             |
| 16. Edward Hymes, A.B.               | 33. Louis Stürcke                   |
| 17. Matthew T. Johnston, A.B.        | 34. Algernon Thomas Sweeney, B.S.   |
|                                      | 35. Russell Lord Tarbox, A.B.       |

**Master of Laws**

- |                                  |                                  |
|----------------------------------|----------------------------------|
| 1. Robert Chetwood Beatty, LL.B. | 2. William Bell Wait, Jr., LL.B. |
|----------------------------------|----------------------------------|

**Doctor of Medicine**

- |                                    |                                  |
|------------------------------------|----------------------------------|
| 1. Burr Reeve Abbe, Jr., A.B.      | 21. Martin Francis Burns, A.B.   |
| 2. Edward Gurdon Aldrich           | 22. Joseph Byrne, A.B.           |
| 3. Archibald Fowler Alexander      | 23. Herbert Swift Carter, A.B.   |
| 4. Lewis Nostrand Anderson         | 24. Theodore Chamberlin, A.B.    |
| 5. David Fitch Armstrong, A.B.     | 25. George Fletcher Chandler     |
| 6. Thomas Hanlon Atkinson, A.B.    | 26. Robert Fendall Chapman, B.S. |
| 7. James Cook Ayer, A.B.           | 27. Thomas Weston Chester, A.B.  |
| 8. Frederick Randolph Bailey, A.B. | 28. John Rogers Clark, A.M.      |
| 9. George Wheelock Banning         | 29. Raymond Clark                |
| 10. Herman Benjamin Baruch, B.S.   | 30. Finlay Ransom Cook, A.B.     |
| 11. Arthur Loring Beals, A.B.      | 31. Henry Mortimer Cunningham    |
| 12. Wright Butler Bean             | 32. Thomas Maltby Cunningham     |
| 13. James Bishop, Jr., A.B.        | 33. Edward Rue Curry, A.B.       |
| 14. Joseph Wilbur Bourland, A.B.   | 34. Robert Denniston, A.B.       |
| 15. John Newton Boyce              | 35. Edmund LeRoy Dow, M.S.       |
| 16. William Augustus Boyd          | 36. William Augustus Downes      |
| 17. William Little Bradley, A.B.   | 37. James Walter Dunphy          |
| 18. Samuel Adolph Buchenholz       | 38. John Franklin Dunseith       |
| 19. Thomas Everett Bullard         | 39. John Watson Durkee           |
| 20. William Duff Bullard           | 40. Basil Hicks Dutcher, Ph.B.   |

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|-----------------------------------------|---------------------------------------------|
| 41. Leonard Wheeler Ely, A.B.           | 84. Edward Leland Kellogg                   |
| 42. Philip Embury                       | 85. Thomas Alexander Kenyon                 |
| 43. Evan Morton Evans, B.S.             | 86. Edward Loughborough Keyes, A.B.         |
| 44. Samuel Morley Evans                 | 87. Theron Wendell Kilmer                   |
| 45. Carlisle Franklin Ferrin, A.B.      | 88. William Thomas Charles Klein            |
| 46. Peter Conover Field, B.S.           | 89. Conrad Piser Kornreich                  |
| 47. Alston Fitts, A.B., LL.B.           | 90. John B. Kouwenhoven, A.B.               |
| 48. Frederic Hoole Floy, A.B.           | 91. Edmond John Labbé                       |
| 49. Russell Story Fowler                | 92. Theodore Alexander Lehmann              |
| 50. Robert Samuel Freedman              | 93. Louis Lesinsky, A.B.                    |
| 51. Samuel Friedman                     | 94. Morris Levy, A.B.                       |
| 52. Samuel Knapp Frost                  | 95. Leon Theodore Lewald                    |
| 53. Herbert Edmond Gardinor             | 96. George French Little, A.B.              |
| 54. James Augustus Gardner              | 97. Henry Graham MacAdam                    |
| 55. William Gauch, Jr.                  | 98. Montefiore Levy Maduro                  |
| 56. Abraham Lincoln Goodman, Ph.G.      | 99. Jeremiah Neil Martin, A.B.              |
| 57. Albert Rotild Goodman               | 100. Walter Frederick McCabe, Ph.B.         |
| 58. Henry Michael Groehl, Ph. G.        | 101. John Joseph McCoy                      |
| 59. Sidney Haas                         | 102. Frank Harold McLaury                   |
| 60. Charles Edward Hall, B.S.           | 103. Clarence Arthur McWilliams, A.B.       |
| 61. Whitfield Harral                    | 104. Frank Sherman Meara, A.B., Ph.D.       |
| 62. William Nelson Harrison             | 105. Emery Austin Miller                    |
| 63. Theodore Stuart Hart, A.M.          | 106. George Swan Mooney, Ph.G.              |
| 64. John Gael Hathaway                  | 107. Harold James Morgan                    |
| 65. Allen Hazen, A.B.                   | 108. John Bennett Morrison                  |
| 66. Joseph Heimowitz                    | 109. Michael William O'Gorman, A.B.         |
| 67. Charles Herrman, B.S.               | 110. Horace Wilbur Patterson                |
| 68. Philip Hanson Hiss, Jr.             | 111. George Stark Pearce                    |
| 69. Henry William Diedrich Hol-<br>ling | 112. Guy Shearman Peterkin                  |
| 70. Edwin Holmes, A.B.                  | 113. William Robert Pfeuffer, B.S.A., Ph.G. |
| 71. James Fred Holmes, A.M.             | 114. Charles Dickinson Phelps, A.B.         |
| 72. Joseph Scripture Holroyd            | 115. Paul Chrysostom Phillips, A.B.         |
| 73. Gustavus Adolphus Humphreys, A.B.   | 116. Morris Pollack                         |
| 74. Lee Maidment Hurd                   | 117. Walter Bonamy Power                    |
| 75. David Jacob Hyman                   | 118. Louis Frederick Psotta                 |
| 76. Robert Franklin Ives                | 119. Myles Purvin                           |
| 77. Theodore Israel Jacobus, B.S.       | 120. George Rauchfuss                       |
| 78. James Ralph Jacoby, A.B.            | 121. Francisco Rivera-E                     |
| 79. Theodore Caldwell Janeway, Ph.B.    | 122. Frank Wade Robertson                   |
| 80. Charles H. Johnson                  | 123. Fielding Tecumseh Robeson, A.B.        |
| 81. William Mudd Jordan                 |                                             |
| 82. Julius Jungmann                     |                                             |
| 83. Henry Chrysostom Keenan, A.B.       |                                             |

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|-------------------------------------------|------------------------------------------|
| 124. Charles Thomas Robinson, A.B.        | 144. Charles Auguste Valadier, A.B.      |
| 125. Harry Rodman, A.B.                   | 145. Gilbert Julius Van der Smissen      |
| 126. William Homan Roe                    | 146. Frederick Van Vliet                 |
| 127. Edward Nicholas Roeser, B.S.         | 147. William Remsen Varick               |
| 128. Edward Leopold Rose                  | 148. Walter Duval Webb                   |
| 129. Louis Rosenwasser                    | 149. Henry Goodwin Webster, A.B.         |
| 130. Adam Emil Schmitt                    | 150. Stuart Webster, A.B.                |
| 131. Edward Schnaper                      | 151. William Edward West, A.B.           |
| 132. Frank Walker Sears                   | 152. Frederick Newton Whitehorne, A.B.   |
| 133. George William Shera, A.B.           | 153. Howard Crosby Williams              |
| 134. Ernest Frederick Sickenberger, Ph.G. | 154. William Robert Williams, A.M.       |
| 135. Rev. William Walter Smith, A.M.      | 155. William Robert Anthony Wilson, A.B. |
| 136. Jacob Sobel, A.B.                    | 156. Isaac Max Wilzin                    |
| 137. Louis John Frederick Staack          | 157. Henry Wintch                        |
| 138. Paul Gerald Taddiken                 | 158. Ferdinand Charles Wolff             |
| 139. Robert Wood Tate                     | 159. Goodall Harrison Wooten, B.S., A.M. |
| 140. Alfred Simpson Taylor, A.M.          | 160. Joe Sil Wooten, Sc.B.               |
| 141. William Epaphroditus Thomas          | 161. Vincent Jay Youmans, Ph.B.          |
| 142. Joseph Reynolds Tillinghast, Jr.     | 162. Fred Templeton Zabriskie, A.B.      |
| 143. Walter Dey Trenwith                  | 163. Charles Cowing Zacharie.            |

### Engineer of Mines

- |                                 |                                 |
|---------------------------------|---------------------------------|
| 1. Leon Hyneman Barnett         | 7. Louis Doremus Huntoon, Ph.G. |
| 2. Frederick Phinney Bayles     | 8. Zadok Harry Jarman           |
| 3. Benjamin Palmer Carter       | 9. William Bradford McKinlay    |
| 4. Max Dobbins                  | 10. John Seward                 |
| 5. Benjamin Britton Gottsberger | 11. Morril Boughton Spaulding   |
| 6. Charles Simon Herzig         | 12. Lowe Whiting                |
| 13. Roberto Yrizar              |                                 |

### Civil Engineer

- |                                        |                                   |
|----------------------------------------|-----------------------------------|
| 1. Joseph Albert Alexander             | 10. Clarence Frost Horton         |
| 2. David Henry Baldwin                 | 11. William Bard Johnstone        |
| 3. Joshua Binion, B.S.                 | 12. Samuel Osgood Miller          |
| 4. Edward Coykendall                   | 13. Leon Solomon Moisseieff       |
| 5. Henry Welles Durham                 | 14. Charles Paul Peugnet          |
| 6. Ira Nash Evans                      | 15. Herbert Pinkham               |
| 7. Ernest August von Fintel, Jr., B.S. | 16. Lucien Rowland Shattuck, B.S. |
| 8. Charles Gartensteig, B.S.           | 17. Charles Douglas Shradly       |
| 9. Frank Joseph Morgan Grace           | 18. John Henry Stewart            |
| 20. Frederick Warwick Walker           | 19. Edwin Howard Thomes, Ph.B.    |

**Electrical Engineer**

- |                                |                              |
|--------------------------------|------------------------------|
| 1. William Claflin Andrews     | 7. George Wesley Fletcher    |
| 2. George Frost Archer         | 8. Gustavus Town Kirby       |
| 3. Victor Mayor Benedikt, B.S. | 9. Percival Robert Moses     |
| 4. Joseph Bijur, A.B.          | 10. Isaac Natkins, B.S.      |
| 5. Harold Winthrop Buck, Ph.B. | 11. Alexander Farnum Ormsbee |
| 6. Edward Vermilye Cox, Ph.B.  | 12. Frederick Condit Reeve   |
| 13. Frank Sutton               |                              |

**Metallurgical Engineer**

David Foerster

**Bachelor of Philosophy**

(Course of Analytical and Applied Chemistry)

- |                             |                            |
|-----------------------------|----------------------------|
| 1. Frederick Hedley Jobbins | 3. Charles Lawrence Riker  |
| 2. Henry Kraemer, Ph.G.     | 4. Samuel Auchmuty Tucker. |

**Bachelor of Philosophy**

(Course of Architecture)

- |                           |                               |
|---------------------------|-------------------------------|
| 1. Abram Horace Albertson | 9. Charles Harris Lum         |
| 2. Henry Dick Bultman     | 10. Edgar Joachim Moeller     |
| 3. Duncan Willson Candler | 11. Harry Burritt Mulliken    |
| 4. Fred Hall Dewey        | 12. Francis Livingston Pell   |
| 5. Mortimer Joseph Fox    | 13. Rudolph Henry Peppmüller  |
| 6. Howard Stevens Hadden  | 14. Howell Corbey Perrin      |
| 7. Elisha Harris Janes    | 15. Lewis Frederick Pilcher   |
| 8. Richard Leopold Leo    | 16. Richard Montgomery Schell |

**Master of Arts**

- |                                |                                   |
|--------------------------------|-----------------------------------|
| 1. Bradbury Cilley             | 12. Benjamin G. Paskusz           |
| 2. Horatio Seymour Eisman      | 13. Mrs. Agnes Lillie Pearson     |
| 3. Frederic Appleton Flichtner | 14. Charles Tomlinson Rittenhouse |
| 4. Hermann George Friedmann    | 15. Charles Colman Rosewater      |
| 5. William Henry Hirsh         | 16. Sanford Louis Rotter          |
| 6. Herbert McLeod Johnstone    | 17. Peter Schmuck                 |
| 7. Shizuo Kondo                | 18. Delos DeWolf Smyth            |
| 8. Caspar Levias               | 19. Louis Stürcke                 |
| 9. John J. McNulty             | 20. Charles Auguste Valadier      |
| 10. John Alexander Mathews     | 21. Theodore Greely White         |
| 11. Herbert Noble              | 22. Samuel Lee Wolff              |
| 23. Abraham Yohannan           |                                   |



**Doctor of Philosophy**

- |                                |                               |
|--------------------------------|-------------------------------|
| 1. John Henry Banks            | 11. Harold Griffing           |
| 2. George James Bayles         | 12. Cavalier Hargrave Jouet   |
| 3. Francis Burke Brandt        | 13. Ernst Joseph Lederle      |
| 4. Roeliff Morton Breckinridge | 14. William Diller Matthew    |
| 5. Ferdinand Ezra M. Bullowa   | 15. Robert Andrews Millikan   |
| 6. Frederic Taber Cooper       | 16. Mrs. Anna Stockton Pettit |
| 7. Francis Bacon Crocker       | 17. John Krom Rees            |
| 8. Herman Stearns Davis        | 18. John Kunkel Small         |
| 9. Allison Emery Drake         | 19. Joseph Struthers          |
| 10. Harrison Gray Dyar         | 20. Francis Walker            |
| 21. Delancy Walton Ward        |                               |

**HONORARY DEGREES****Doctor of Laws**

THOMAS MESSINGER DROWN, M.D.  
President-elect of Lehigh University

**Fellows****University Fellows**

- |                                                                                                |                           |
|------------------------------------------------------------------------------------------------|---------------------------|
| William Rosensweig Arnold,<br>A.B., Ohio Wesleyan University, 1892. Subject, Semitic Languages |                           |
| Arthur Beatty,<br>A.B., University of Toronto, 1893.                                           | " English                 |
| James Walton Cooper,<br>A.B., Doane College, Neb., 1891.                                       | " Romance Languages       |
| Alexander Clarence Flick,<br>A.B., Otterbein University, 1894.                                 | " History                 |
| Shepherd Ivory Franz,<br>A.B., Columbia College, 1894.                                         | " Experimental Psychology |
| Bradney Beverley Griffin,<br>B.S., College of the City of New York,<br>1894.                   | " Biology                 |
| Rev. Francis William Howard,<br>A.B., Niagara University, 1886.                                | " Sociology               |
| Judah Joffe,<br>A.B., Columbia College, 1893.                                                  | " Comparative Philology   |
| Herbert McLeod Johnstone,<br>A.B., Columbia College, 1894.                                     | " Literature              |
| Frederic Ludlow Luqueer,<br>A.B., Columbia College, 1894.                                      | " Education               |
| James Howard McGregor,<br>B.S., Ohio State University, 1894.                                   | " Biology                 |

Simon James McLean, A.B., Toronto University, 1894.	Subject, Political Economy
John Angus MacVannel, A.B., University of Toronto, 1893.	" Philosophy
Milo Roy Maltbie, Ph.B., Upper Iowa University, 1892.	" Administrative Law
George N. Olcott, A.B., Columbia College, 1893.	" Latin
Max Osterberg, A.B., Columbia College, 1894.	" Mechanics
Charles Tomlinson Rittenhouse, E.E., Columbia College, 1894.	" Electricity
Frederick William Sanders, A.B., College of the City of New York, 1893.	" Sociology
Albert Schneider, B.S., University of Illinois, 1894.	" Botany
Henry Clapp Sherman, B.S., Maryland Agricultural College, 1893.	" Chemistry
Frank Leo Tufts, B.S., A.M., Antioch College, 1891; A.B., Harvard College, 1894.	" Physics
Walter Shepard Ufford, A.B., Amherst College, 1882.	" Sociology
Delos F. Wilcox, A.B., University of Michigan, 1894.	" Administrative Law
Joseph Alexander Wright, Ph.B., DePauw University, 1894.	" Comparative Jurisprudence

**Barnard Fellow**

WILLIAM LISPENARD ROBB, Ph.D.

**Henry Drisler Fellow**

JOHN KASSON LATHROP, A.B.

**Alumni Association Fellows**

FREDERICK J. BROCKWAY, M.D.

RICHARD H. CUNNINGHAM, M.D.

PHILIP HANSON HISS, M.D.

**John Tyndall Fellow**

WALTER WHEELER COOK, A.B.

**McKim Fellow**

JOHN RUSSELL POPE, Ph.B.

## Columbia Fellow

SETH JUSTIN TEMPLE, Ph.B.

## Annual Fellow

JAMES B. REYNOLDS, A.B.

## University Scholars

Benjamin William Arnett, Jr., A.B., Wilberforce University, 1886.	Subject, Education
James Fuller Berry, A.B., Columbia College, 1894.	" Mathematics
Roger Lewis Conant, A.B., Columbia College, 1895.	" Classical Philology
Horace Mann Conaway, A.B., Scio College, 1888 ; A.B., Ohio University, 1892.	" History
Joseph G. C. Cottier, M.E., Stevens Institute, 1894.	" Mechanics
Israel Davidson, A.B., College of the City of New York, 1895.	" Semitic Languages
John Driscoll FitzGerald, 2d, A.B., Columbia College, 1895.	" Romance Languages
Samuel Friedwald, A.B., College of the City of New York, 1891.	" Mathematics
William Oscar Gennert, A.B., Columbia College, 1895.	" Political Science
Abel Joel Grout, Ph.B., University of Vermont, 1890.	" Botany
Frederick Smith Hall, A.B., Wesleyan University, 1886.	" Economics
Henry Eugene Houston, A.B., Columbia College, 1895.	" Experimental Psychology
Daniel Jordan, B.S., University of France, 1888 ; B.Pd., University of the State of New York, 1893.	" Romance Languages
Cassius J. Keyser, B.S., University of Missouri, 1892.	" Mathematics
Elliott Woodbury Lamson, A.B., Brown University, 1892 ; A.B., Cornell University, 1894.	" Political Philosophy
George Alfred Lawrence, A.B., Stanford University, 1892 ; A.M., Columbia College, 1895 ; M.D., 1895.	" Comparative Neurology

Wilfrid Lay,		
A.B., Columbia College, 1893.	Subject, Psychology	
Ralph Griffith Levering,		
B.L., Maryville College, Tenn., 1895.	" Public Law	
Newton D. Mereness,		
A.B., University of Michigan, 1892 ;		
A.M., 1894.	" History	
Isaac P. Morrison,		
A.B., University of Washington, 1895.	" Political Science	
Frank Henry Sparks Noble,		
A.B., Drake University, Iowa, 1892 ;		
A.M., State University of Iowa, 1894 ;		
LL.B., 1894.	" Finance	
Frederick Clark Paulmier,		
B.S. Princeton College, 1894 ; M.S., 1895.	" Biology	
Warren Waverly Phelan,		
A.B., Columbia College, 1894.	" Comparative Jurisprudence	
Isaac Max Rubino,		
A.B., Columbia College, 1895.	" Biology	
Per Axel Rydberg,		
B.S., University of Nebraska, 1891 ;		
A.M., 1895.	" Botany	
Herman Simpson,		
A.B., University of the City of New York, 1895.	" Sociology	
Edward Gleason Spaulding,		
B.S., University of Vermont, 1894.	" Physics	
Ansel Augustus Tyler,		
A.B., Lafayette College, 1892.	" Botany	
Newton Foster Vail,		
A.B., Hobart College, 1891 ;		
A.B., Yale College, 1892.	" Latin	
Edward Henry Warren,		
A.B., Harvard University, 1895.	" Sociology	
Otto Paul Zeitfuchs,		
Testimonium Maturitatis, Gymnasium at Zuellichau, 1888.	" Classical Philology	

### Alonzo Clark Scholar

IRA T. VAN GIESON, M.D.

## SUMMARY OF STUDENTS

At Columbia an effort is made to distinguish sharply between the college and the university faculties, the latter representing what pedagogically Columbia believes to be the university. From this point of view at Columbia

The School of Arts is the college

The Faculty of Law

" " " Medicine

" " " Mines

" " " Political Science

" " " Philosophy

" " " Pure Science

} constitute the university.

College seniors may study under any of the university faculties. The Faculties of Law, Medicine, and Mines are professional faculties, and conduct the professional schools, known as the School of Law, the College of Physicians and Surgeons, and the School of Mines, which last is really a school of architecture and applied science. The Faculties of Philosophy, Political Science, and Pure Science, conduct the work generally organized elsewhere as the graduate school; but in addition they give much instruction not only to seniors in the college but also to regular students in the professional schools, a large percentage of whom are also college graduates. The following table shows the total number of students studying in the college and under each university faculty, and also the number registered primarily in the college and with each university faculty. The first set of figures is free from duplication and shows the exact total of students in the university. The second set shows the number studying under each faculty, including duplicates; the duplication indicates the extent to which Columbia's wide educational tender is treated as a unified tender, regardless of subdivision by schools and faculties.

SCHOOL OF ARTS.....	260	268
FACULTY OF LAW.....	324	334
FACULTY OF MEDICINE.....	699	704
FACULTY OF MINES.....	370	378
FACULTY OF POLITICAL SCIENCE.....	62	341
FACULTY OF PHILOSOPHY.....	124	222
FACULTY OF PURE SCIENCE.....	34	83
	<hr/>	<hr/>
Total.....	1873	2330

## Academic Calendar

- 1895—Oct. 7.—First term, 142d year, begins, Monday.  
Nov. 5.—Election day, Tuesday, holiday.  
Nov. 28.—Thanksgiving day, Thursday, holiday.  
Nov. 29.—Friday, holiday.  
Dec. 23.—Christmas holidays begin, Monday.
- 1896—Jan. 4.—Christmas holidays end, Saturday.  
Jan. 27.—Mid-year examinations begin, Monday.  
Feb. 8.—First term ends, Saturday.  
Feb. 10.—Second term begins, Monday.  
Feb. 12.—Lincoln's Birthday, Wednesday, holiday.  
Feb. 19.—Ash-Wednesday, holiday.  
Feb. 22.—Washington's birthday, Saturday, holiday.  
April 3.—Good-Friday, holiday.  
May 18.—Concluding examinations, begin, Monday.  
May 30.—Memorial day, Saturday, holiday.  
June 10.—Commencement, Wednesday. School of Arts and School of  
Mines examinations for admission begin.  
June 13.—Examinations for admission end, Saturday.  
Sept. 28.—Examinations for admission begin, Monday.  
Sept. 30.—Matriculation and registration begin, Wednesday.  
Oct. 5.—First term, 143d year, begins, Monday.





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